Gleanings in Bee Culture

December 1947 Vol. 75, No. 12

From the Apiary Notebook

By Clarence Tontz

When we bought our present small plot of land almost two years ago the only worth while thing growing on it was a neat row of four oil olive trees. These trees, planted around 40 years ago, had survived the long periods of drouth by sending numerous long roots through the soil in search of every available drop of moisture. In this country where irrigation is a must, they had not been artificially watered. However, unless they have abundant winter rains, they bear little or no fruit.

Early this past spring the water line back of our property sprang a leak during the middle of one night and flooded the area surrounding these trees. Soon they burst into full bloom (Fig. 1) and the bees worked on the blossoms furiously for about two hours in the early mornings. According to official reports, this county (Riverside) is one of the few counties of California ever known to yield honey from olive blossoms. In this particular case the bees seemed to have stored little nectar, but gathered much pollen. The trees (for the first time in many years) are loaded down with

No. 1—Oil olive trees in bloom.

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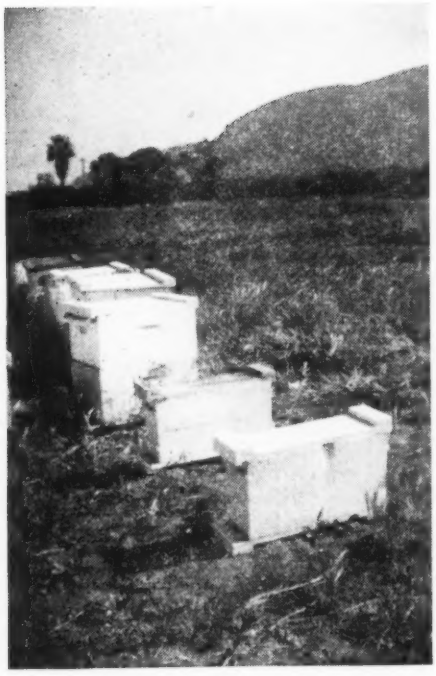

No. 2—"Nuc" boxes used for keeping extra queens.

No. 3—Melting solder with a blow torch.

oil olives which are not edible, but are in great demand by olive oil packers.

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Dr. Miller's method for getting the best possible honey crop was to sacrifice the little colonies in order to build up the big colonies. This method, although old, is still modern. This spring, just before the orange and sage flow was due, I checked my bees for colony strength. Some I found were below par, but had good queens. If I united such a colony with a strong colony I would have to sacrifice a good queen. So I brought my nucleus boxes into good use. When I found a weak colony with a good queen, I placed this queen into a nuc box (Fig. 2) with one frame of brood and adhering bees and a comb or two of honey. The weak colony, now queenless, was then united with a strong colony to better enable the strong colony to drag in the nectar in short order during the usually brief flow. The queen and brood in the nucleus can spend the rest of the season in building up to colony strength. Also they are always handy to have in the outyard to unite with a strong colony that has suddenly become hopelessly queenless.

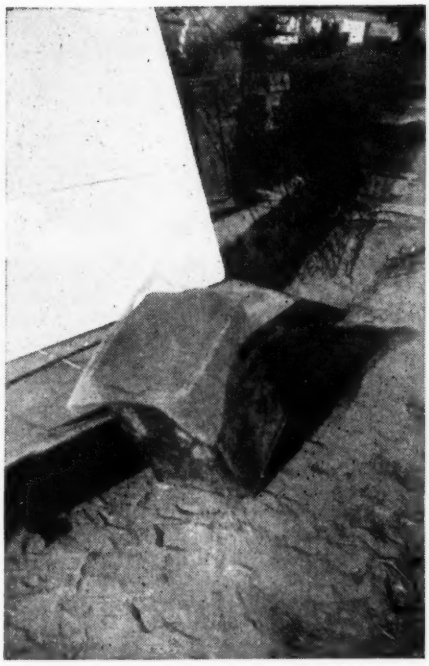
* * * * *

An old 5-gallon honey can that may be too rusty for honey is still useful for many jobs. An easy way to remove the top without leaving a jagged edge is to melt the solder with a blow torch (Fig. 3). Just run the flame around the seam of the can. Then (Fig. 4) while the can is still hot, pull off the top with a pair of pliers. One handy use for these cans is as a container for melted wax. Fig. 5 shows a can with a strainer made of ordinary window screen. The screen strainer is pocketed so that it hangs down into the can about two inches. This pocketed effect is obtained by revolving a flat piece of screen over a round object. The rounded end of a 4 x 4 will do the trick.

* * * * *

Symbolic of western beekeeping is the white sage (Fig. 6). A beautiful plant, it takes all the bows, while the less attractive black sage produces most of the sage honey. However, the white sage is a valuable honey plant in that it comes

No.4—Pulling off the top of the can with a pair of pliers.



No. 5—Open top of can with strainer of window screen.

into bloom after the black sage and at a time when the bees are stronger and able to take the fullest advantage of any honey plant that has anything to offer. Probably much of the white sage honey is mixed in with the honey from the wild buckwheat which blooms concurrently. I have tasted so - called wild buckwheat honey that was heavy-bodied and mellow. The buckwheat honey, I suspect, had a fair amount of white sage honey therein. Straight wild buckwheat honey, although very palatable, has just a tint of "bite" to it.

Our ranges contain a great many plants that do little good to anybody. I wonder if the more valuable plants like the sages and buckwheat could be propagated to oust some of these worthless weeds and improve our bee pasture. The wild buckwheat is a tough, drouth resistant plant that is capable of crowding out many types of plants or maybe I should say it will grow where many other types die. Unfortunately, the buckwheat and sages yield to any extent only where the

(Continued on page 755)

No. 6—White sage in bloom.

B & Z Library

What About Beeswax Today?

By H. H. Root

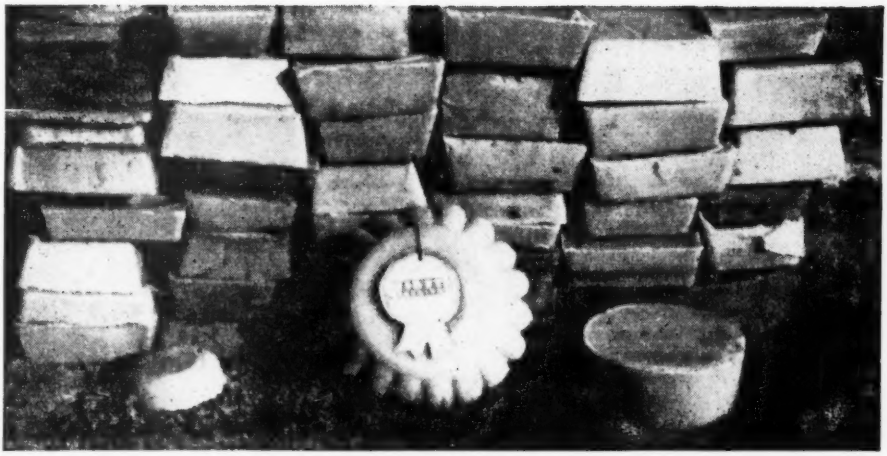
For many years beeswax, by weight, amounted to about 2% of a beekeeper's total crop; in dollars, by reason of the higher relative price, it amounted to nearly 10% of the total volume. With the advent of the Second World War, the ceilings on both beeswax and honey were such that the percentage of values remained about the same. When the ceilings were removed on account of rationing of sugar, the price of honey advanced to double or even triple the former ceiling, while beeswax advanced to a lesser extent, therefore beeswax no longer amounted to 10% of the total volume. In some localities the foregoing might not hold true. Generally speaking, however, in the hysteria that developed after the ceilings were removed, most producers gave more attention to selling honey than to selling beeswax and, perhaps under the circumstances, this was a natural result that could not well have been prevented.

Today, even with short crops in many important localities, it seems evident that with the easing of some of the extremely high prices prevailing for honey there is a tendency for the dollar value of beeswax to come back nearer 10% of the dollar value of honey. Granting that this may be a controversial question, depending upon local conditions, here is an observation the soundness of which few will want to question: many a business owes its chance to make a gain on a comparatively slight increase in total volume of sales. There are certain fixed costs called burden or overhead that remain the same. In other words, many a man, finding himself in the red, can change the red to black by 10% to 20% increase in sales.

Beeswax is not as scarce as it was and although slightly lower prices prevail, there is reason to continue giving attention to the collection of beeswax and to its preparation for market. Beeswax rendered from cappings usually amounts to one or two pounds from each 100 pounds of honey extracted. By careful attention to the collection of scraps from burr combs, and to the judicious sorting out and rendering up of unsuitable combs, the possible one and one half pounds obtainable from cappings may be increased to two and one half pounds, or in some cases to three pounds per hundred pounds of honey extracted. In good times or bad, scraps of beeswax should be saved. Saving is thrift and thrift points toward success.

Under OPA very little attention was paid to quality. In fact, whenever the demand is greater than the supply, quality suffers. Many producers yielded to the temptation to scrape frames and hives and add the propolis scrapings to the beeswax. In the long run quality is an important consideration and it is evident that producers of beeswax need to pay more attention to quality right now, especially since certain important users of beeswax are definitely opposed to sticky, low melting point resins found in propolis. In fact, if more attention is not paid to the quality of beeswax there is real danger that other waxes, free from resin, may successfully compete with beeswax for certain industrial uses such as insulation, waterproofing, and even, in some cases, for polishes. To improve the quality of beeswax and to eliminate much of the mush that forms on the under side of the cakes, the water used in rendering should, by all means, be acidified with vinegar. The amount of vinegar to the barrel of water depends upon the alkaline content of the water—usually a half gallon of vinegar to a barrel of water is sufficient. This prevents partial saponification of the wax by the alkalies in the water that results so often in mush on the underside of the cake.

By way of caution, beeswax should never be heated except over water. Beeswax should never reach a temperature beyond that of boiling water, for beeswax at temperatures in excess of 212° is much more likely to be darkened by contact with metal. There is even danger of breaking down the wax itself into an almost worthless mushy state. It should never be kept even at moderate heat longer than is absolutely necessary as it will darken noticeably at prolonged low heat. There



Commercial beeswax as beekeepers prepare it for market.

is also great danger, if beeswax is heated dry, that it may reach its own flash point and therefore burst into flame. To prevent excessive temperatures, producers sbould never heat beeswax except over water, then the temperature of the wax itself can never get above 212°F.

A beekeeper, heating wax in a kettle without water, allowed the wax to reach its own boiling point. To prevent it from boiling over he poured in a little water. The whole mass flew up into the air; but it was the water, not the wax, that exploded.

Beeswax has its rivals today. For example, synthetic waxes having the same chemical requirements as beeswax appeared during the war years. In other words, a chemist who had never seen beeswax, but, possessing a chemical analysis of its ingredients, could assemble from other waxes a wax having the same chemical requirements of beeswax, which he would call beeswax. However, anyone familiar with beeswax could tell the difference at once. These synthetic waxes, while interesting, were never serious competitors.

Paraffin, familiar to everyone, is a mineral wax with a coarse granular formation. Except when in a very warm room, it will fracture if struck with a hammer, for it is brittle. It is sometimes mixed with beeswax for certain purposes but whenever that is done the saponification number is at once affected, for no mineral wax will saponify.

Some 30 years ago a non-crystalline mineral wax—probably a ceresin—was produced in the West. It was not brittle and it resembled beeswax in many ways. When struck with a hammer it would not fracture except at very low temperatures.

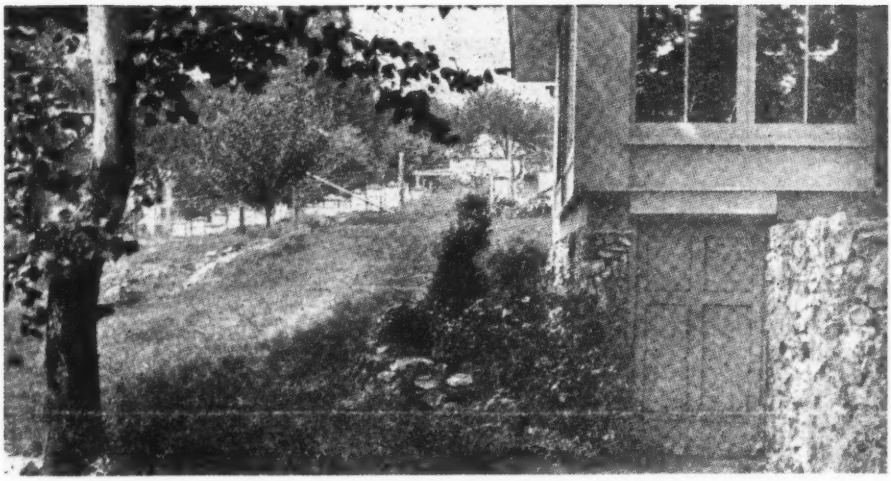
Since that time a number of oil companies have produced a similar wax resembling beeswax in appearance. These waxes are variously called **amorphous,** meaning without form, or **microcrystalline,** the name coming from the fact that the crystals are so small as to be nearly microscopic in size. These waxes are serious contenders with beeswax which they resemble in many ways. The melting point is usually 15 to 20° higher than that of the hardest beeswax. They mix in all the proportions with beeswax and during the war these mixtures were used in large quantities for waterproofing. Some of the beeswax offered for sale as surplus war material often contains appreciable quantities of microcrystalline mineral wax. Mineral wax is not as good as beeswax for polishes for, like paraffin, the more it is rubbed, the duller the surface becomes.

Happily, a simple chemical test reveals the presence of paraffin or microcrystalline mineral wax, for as has been stated, these waxes do not saponify and the saponification

(Continued on page 757)

Winter Work for Beekeepers

By C. H. Pease



My apiary is only a few steps from my bee cellar.

Away back in 42 B. C., Publius Syrus said: "We should provide in peace what we need in war", which, being interpreted into modern beekeeping parlance would read: "In winter prepare for summer".

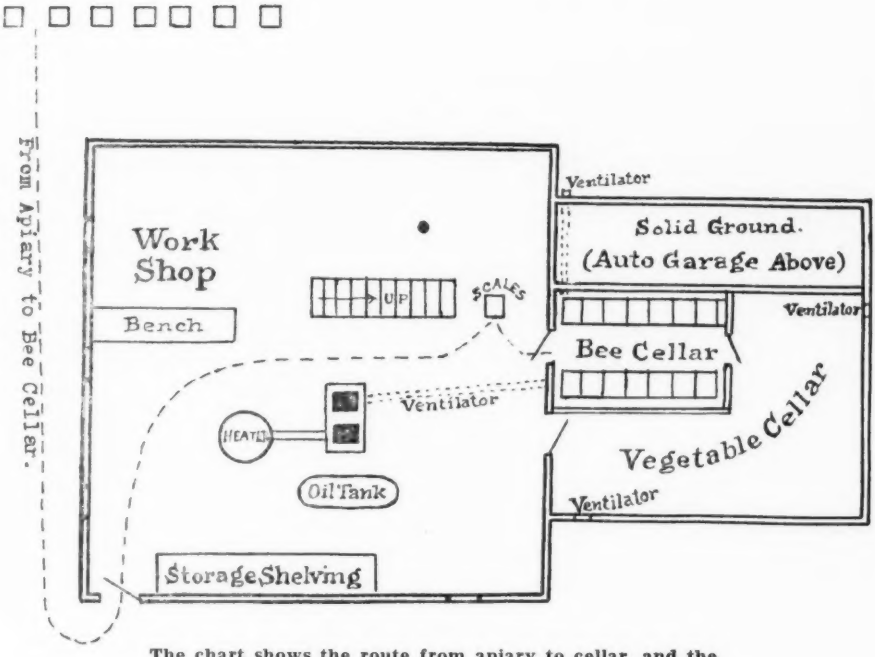
If there is anything that takes the joy out of beekeeping during the busy days of spring and summer it is the need of material that is not available, or not in condition to use when you want it. If you see a swarm in a tree, even if you have a hive and combs, the bees may not wait five minutes for you to clean the outfit and make it ready for use. The loss of a prime swarm in the front end of the honey flow will rob you of a lot of honey that should be stored in your supers and, as Editor Deyell said in Gleanings, July, 1929, page 443: "Honey, like time, is money".

The propolis and wax in hive bodies, bottom boards, inner covers, supers, and all frames should be scraped off and cleaned before they go back to the bees, and winter is the time to do it.

If you will need new material next season, get it in the early winter and assemble it at your leisure while the blizzards are "blizzing" outside; or if you have any material that needs repairing or painting, don't put it off until you want to use it. There is no more convenient time than in the winter to make every piece of material ready for instant use when minutes are worth a dollar apiece "in the good old summer time".

An almost indispensible adjunct to any beekeeper's equipment, regardless of whether he is a backlotter or carload producer, is a workshop in a room that can be heated, with a bench, a good set of tools, and the know-how to use them. Spending your leisure hours in a warm and light workroom when nothing can be done outside, doing the innumerable jobs of putting your bee material in order, or even the little tinkering jobs that demand attention around home buildings, is not work —it's fun, and profitable fun it is, too, because it is coupled with the "grand and glorious feeling" that your next summer's work will be easier, pleasanter, and productive of better and more profitable results. Sir James M. Barrie once said: "Nothing is work unless you would rather be doing something else".

Our house is situated on ground sloping down from back to front, facing south, and the space underneath, the front of which has windows in the south wall, is a light



The chart shows the route from apiary to cellar, and the workshop convenient to upstairs as well as outdoors.

and warm basement (my workshop) where the oil-burning heater is located; back of this is the colder cellar, partitioned off from the warm front and divided to separate the bee cellar from the vegetables.

Owing to the lay of the land the entrance is practically level with the outside and permits of easy traffic in and out through a three-foot door, and through which my wheelbarrow and I roll my bees directly into the bee cellar in the rear, two hives at a load, weigh them, and record the weights at the rate of eight colonies in the time that a neighbor beekeeper gathers his material and packs one colony for outside wintering. Not only that, but my bees go where no normal colony has succumbed to winter hazards in 26 years, while my neighbor loses some almost every winter. All winters look alike in both my workshop and the bee cellar.

I believe there are mighty few beekeepers so situated that they can't have a little workroom either in or under their house or even in an outbuilding in which a small stove, burning very little fuel, could make it comfortable for work on mild winter days; and there are days during "winter thaws" and early spring when no artificial heat is needed.

If you have no workshop, get busy and make one—you'll be glad if you do—and you can do it. You know, "Where there's a will there's a way".

Canaan, Conn.

Circuit Court Holds Michigan Apiary Law Forbidding Importation of Bees on Combs Constitutional

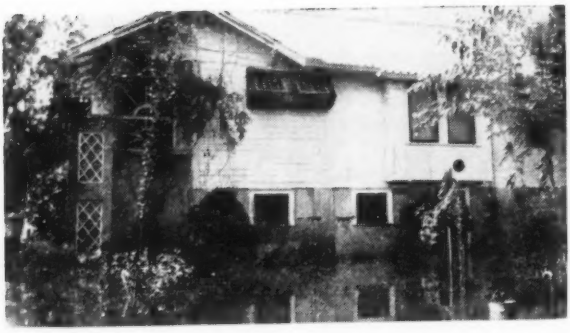
In the case of Bart Aiken, Paul Thompson, et al, Plaintiffs, versus Charles Figy, Director of the Department of Agriculture, and the Department of Agriculture of the State of Michigan, Defendents:

On October 22, 1947, Judge Xenophon A. Boomhower, Circuit Judge for the County of Huron, upheld in part the constitutionality of Section 13 of the State Apiary Law, which forbids the importation of bees on combs and used beekeeping equipment into this state from any other state or country. The Court held, in its opinion, that the portion of Section regarding the importation of bees on combs is constitutional and within the power of the Legislature.

The other portion of Section 13, pertaining to the importation of used beekeeping equipment was declared unconstitutional, for the Court held that to bar importation of such equipment, when properly sterilized to destroy all disease, is going beyond the power of the state, even under its police powers.

Hurricane in Louisiana Destroys Bees

B. Capt. H. Cooper



The 8th day after the hurricane my house is still in 18 inches of water. The mark on the foundation shows where the water reached.

Everyone has read about the hurricane that hit Louisiana on September 18. My apiaries were in the direct path of it. All day the radio kept telling us that the hurricane was headed our way at a speed of 15 miles per hour, and that we should make all the preparations we could. On the morning of the 18th I got up a little after 6 o'clock. There was a stiff wind and the radio said the storm was about 90 miles south, traveling at 15 miles per hour and that everyone should stay inside his home.

My home yard of 109 hives the 4th day after the flood.

Two full supers of honey on this hive in about 4 feet of water.

At 7:30 the storm was reported about 60 miles away. We had our breakfast, turned off the gas, and listened to the radio. At 9 o'clock the wind was hitting around 75 miles and the power company shut off the electricity. I went onto my front porch to watch the storm for it was the first one I had seen on land. I had been through at least a dozen at sea.

Yard No. 3.

My house has a basement and is located at the edge of heavy woods. My home bee yard is about 100 feet from my

house, protected by the woods. The wind at times hit as high as 150 miles an hour, and those big trees would come crashing down, filling the air with flying branches. At about 10:30 the center of the storm arrived. The wind calmed down to about 5 miles an hour and the sun came out. I went to the bee yard and found one hive blown over and about 20 covers off. The storm was picking up again, coming this time from the southeast. By 12 o'clock it had passed and was fairly calm. I jumped into my truck and went to the other yards. There were only a few covers off and 3 hives blown over. The rest of the afternoon was used cleaning up the broken limbs.

At 4:30 a fellow drove up and told us to get out as quickly as possible—that the levees had broken and the water would be here in a few minutes. I jumped into my truck and drove over about five blocks to a ridge. The water was almost to the top of it. Several families asked me what to do and I told them to head for my house which was about eight feet above the level of the ground. When I got back to the house I went to the bee yard and water was rolling in. I have several head of cattle which I started up the ridge. As I took them from the pasture the water was knee deep. I left them on the ridge and started back home. I heard a cow bawling about one half block away. She was tied with about 50 feet of chain. I loosened her and started her up the road. I thought I would have to swim home but when I got there the water was only a little over waist deep, and came in less than 40 minutes. It continued to rise until about midnight when it reached five feet. Next morning I found all of my hives were either floating up against the fence or had drifted on into the woods. They were all three or four stories high with one or two full supers of honey. In three yards I had had 273 hives the week before.

It has been 15 days since the flood and the home yard is still about knee-deep in water. The honey in the hives we have opened is fermenting. I have found enough bees to make three hives in all the yards, but I am young yet—just 70 years last March. In the next 30 years I should be back on my feet again if nothing happens. The accompanying photos will give an idea of what the yards look like.

Chalmette, La.

Honeybee Products to be Developed by Research

To discover and develop new and improved uses for apiary products, research aimed at a number of possible new and little-explored fields of usefulness for the products of honeybees has been approved under the Research and Marketing Act of 1946, it was announced today by the U. S. Department of Agriculture. The studies will be conducted at the Agricultural Research Center at Beltsville, Maryland, by the Division of Bee Culture, Bureau of Entomology and Plant Quarantine, in cooperation with interested medical institutions.

Preliminary investigation has shown that a highly potent substance, anti-biotic in principal, is produced by the organisms responsible for the serious bee disease, American foulbrood. Other bee disease organisms also appear to possess such anti-biotic factors. Steps will now be taken to isolate these anti-biotic factors and to remove toxic substances from them.

The therapeutic value of bee venom will be investigated subsequently. Stings of bees long have been considered to be of benefit in the treatment of arthritis; honey has been considered of medicinal value for centuries. Research to determine the actual medicinal value of these and other bee products has been considered desirable for many years.

Research in these fields not only promises the development of valuable anti-biotic agents, E. A. Meyer, administrator of the new research act pointed out in approving these studies, but will tend to place the beekeeping industry in a stronger position economically. This is very desirable, he said, for it will enable more people to keep bees, which is very important to agriculture in general not only for honey production but also for pollination of many crops.—United States Department of Agriculture, Research and Marketing Act, Washington, Oct. 6, 1947.

Winter Loss from Colonies and Related Factors

By Ed Braun and J. E. Geiger
Dominion Experimental Farm, Brandon, Man.

(Ten Years' Experimental Results 1935-1946)

Part II

(Continued from November issue)

In the preceding paper (Part I), the authors suggested from their data obtained in Manitoba that the winter loss in weight was not dependent upon the age of the queen, or the fact that the colony had been established from package bees. There was some indication, however, that the method of wintering, and the size of the fall population did exert some influence on the winter loss in weight.

The winter loss in weight and the average spring strength of the colonies showed little or no relationship except in the method of wintering, where outside wintering was more favorable in all cases except in the colonies with a low fall population. The relationship between spring and fall strength and honey production was rather erratic in that there did not appear to be any consistent relationship between spring strength and fall strength, but there was a consistent relationship between fall strength and honey production. Therefore, the authors decided to further compare some of the data presented in Table I and the additional factors which they thought might have a bearing on some of the inconsistencies mentioned above, on the basis of comparing different groupings for a two-year period.

Strong and weak colonies, two methods of wintering in a cellar, one method of wintering outside, increase made from over - wintered colonies, package bee colonies, and over-wintered nuclei transferred to full colonies were included in Table II to ascertain, if possible, the relationship between large or small fall honeybee populations, the method of wintering or the type of colonies that might be used, and the effect that would be procured in two succeeding years. Table No. II opposite summarizes the results that were obtained.

Strong Colonies

Strong colonies, covering 55 or more frames with bees in the fall, had the relatively same average loss in weight in the second year as in the first year and this was consistent with the type of wintering employed, namely cellar wintered or out-of-doors. The average spring strengths were nearly identical in the first and second year with the exception of the cellar wintered group which were one frame of bees weaker in their second year as compared with their first year.

The succeeding year's fall strength as well as production were consistently lower regardless of the method of wintering employed. The loss of 80.68 pounds in production, on the average, for all colonies in this group, in their second year, is staggering from a financial viewpoint and difficult to understand in view of the relatively high spring strength of these colonies in their second year of production. Although the definite ratio of one-year to two-year-old queens in these colonies has not been determined for their second year of production, the general arrangement of requeening 50 percent of the colonies in the apiary each year, together with a cursory examination of the data shows a relatively equal distribution of queens of both ages for each year. All of the queens had their right or left wings clipped and their thorax painted each year with the exception of 1935 when no clipping or painting was undertaken. This permitted accurate checking of the ages of all queens in the colonies.

Weak Colonies

Weak colonies, covering 30 frames with bees in the fall, had relatively the same average loss in weight in the second year as in the first year with the exception of the outside wintered group. The average spring strengths were increased in each instance for the second year as compared to the first year and particularly so in the outside wintered group which increased approximately 50 percent.

Furthermore, the second year average spring strengths of the weak

Table II

Summary of Ten Years' Average Results on Winter Loss in Weight, Spring Strength, Fall Strength, and Crop Produced in First and Second Year. (1935-1946).

Grouping Arrangement	Number of Colonies Wintered First Year	Average Winter Loss in Weight in lbs.	Average Spring Strength in Frames of Bees-Brood-Eggs			Average Fall Strength in Frames of Bees-Brood-Eggs		First Crop Average Yield in lbs.	Number of Colonies Wintered Second Year	Average Winter Loss in Weight in lbs.	Number of Colonies Alive Second Year	Average Spring Strength in Frames of Bees-Brood-Eggs	Number of Colonies Utilized for Production Purposes	Average Fall Strength in Frames of Bees-Brood-Eggs			Second Crop Average Yield in lbs.
55 or more frames of bees in fall	144	42.66	9	-1¼-1¾	60	-5	-4	279.86	104	43.66	90	8½-1½-1½	66	46	-4	-3	199.18
55 or more frames cellar wintered	45	47.50	7½-	¼-1½	59	-5	-4	281.00	27	48.00	20	6½- ½- ¾	12	33	-4	-3	117.50
55 or more frames outside wintered	99	40.50	9½-2	-3	61	-5	-4	279.35	77	42.00	70	9½-1½-2	54	49	-4	-3	217.34
30 frames of bees in fall	62	37.50	6¼-	½-1¼	31	-3½-2½		125.97	38	39.60	33	8 -1 -1¾	29	42	-4	-3	203.00
30 frames of bees cellar wintered	47	36.50	6½-	½-1½	30	-4	-2½	125.93	23	37.33	20	7½- ¾-1½	18	41	-3	-3	174.22
30 frames of bees outside wintered	15	38.33	6	-1 -1¼	30	-3½-1½		126.10	13	43.00	13	9 -2 -2	11	42	-5	-3	249.00
Bag covers in the cellar	50		4¾-	¼-1¼	38	½-4½-3		138.08	34	50.00	34	8 - ½-1¾	29	41	-4	-3	168.62
Sealed metal covers wintered in cellar	49		5	- ½-1¼	37	½-4½-3¾		149.10	49	38.75	43	10 - ¾-1¾	33	44	-4	½-4	187.68
Balsam wool (T.E.) outside wintered	45		8½-	1½-2	46	¼-5	-3¾	236.58	45	38.80	43	8¾-2 -2	37	49	-5	-3¾	237.18
Increase colonies	136				29	-4	-3	106.35	112	48.70	112	6½-0 -1	112	43	-4	½-3	164.50
Over-wintered nuclei transferred to full colonies	39		2	-0 - ¾	25	-3½-2½		83.23	29	37.25	29	6 - ½-1	9	43	-4	-4	174.50
Package colonies					32	½-4½-2½		126.00	227	41.20	198	7½-0 -1½	198	40	½-4	-3⅛	181.30

The apiary of the Dominion Experimental Farm, Brandon, Ont.

colonies were nearly identical with the strong colonies in their second year. The fall strength and production averages of the weak colonies in the second year were both substantially increased over the same average of the first year. On the basis of production the outside wintered group practically doubled itself and the cellar wintered group increased their production by one third in the second year, and slightly exceeded the strong colonies regardless of the method of wintering employed.

Comparison of Strong and Weak Colonies

A comparison of the strong and weak colonies in the first year of production leads to the erroneous conclusion that weak colonies in the fall are very definitely inferior from a financial standpoint and should be eliminated as quickly as possible. This is the policy that has been followed by the majority of beekeepers who practice over-wintering by the process of selecting only the strongest colonies in the fall and eliminating those which did not measure up solely on a production basis. The ultimate result has been that relatively strong colonies were present in the spring but the succeeding year's production has been definitely disappointing and from a financial standpoint the returns from such over-wintered colonies have been only slightly better than from package started colonies.

The relative ratio of increased production for the weak colonies in their second year as compared with a similar relative ratio of decreased production for the strong colonies in their second year would tend to indicate two possible solutions: First, that medium strength colonies somewhere between 30 or 55 frames and over, covered by bees in the fall, would be the theoretical ideal strength for wintering-over or, second, that the colony population ratio which is not necessarily directly related to the average winter loss in weight or spring strengths influences the succeeding year's production potential. The part that is difficult to analyze and explain is the relationship between the outside wintered colonies in the strong and weak groupings in the second year, and which becomes more confusing when you try to relate it, on a logical basis, to their first year records.

However, the results which have been obtained from dividing different spring strength colonies by several methods and leaving adequate check or undivided colonies, has shown that there may be a maximum and minimum population strength above or below which the production potential is materially influenced, and this factor may be affecting the apparent contradiction which is evident in Table II. The contradictory data being that the outside wintered, in the strong colony grouping with an average fall

strength of 49 frames covered by bees, produced less (217 pounds) than similar outside wintered colonies in the weak colony grouping (249 pounds), whereas in the first year slightly stronger fall strength colonies in the strong colony grouping produced considerably more honey (279 pounds). A comparison of spring strengths of these two groupings in the second year shows relatively little difference, except probably in the cellar wintered group where the strong colonies have one frame less covered by bees than the weak colonies, therefore the drop in production for the strong colonies and similarly the increase for the weak colonies tends to support the population theory so evident among the divided colonies during the last five years of experimentation.

Bag Versus Sealed Covers in the Bee Cellar

A dry bee cellar has been generally recommended, both from the standpoint of sub-surface moisture or run-off and relative atmospheric humidity, primarily on the basis of reducing mouldy combs and improving the general well being of the colonies during confinement in the cellar. An experiment was begun around 1935 to determine the relative value of treating uniform colonies by three methods: 1, removal of the metal cover and oilcloth and placing two jute bags doubled over on the frames; 2, leaving the metal covers on and letting the bees seal them tight; and 3, removing the cover and oilcloth and replacing these with a double wire screen bee escape and labeling it the ventilated group. It is not intended, here, to review the results of the above experiment but merely to show the relationship between the bagged and sealed covered lower entrance colonies in the cellar and to compare them with the two-colony balsam wool packed upper entrance colonies wintered out-of-doors. The bagged and sealed covered colonies were nearly identical for the first year in spring strength, fall strength, and honey production. The winter loss in weight was 11¼ pounds less for the sealed than for the bag covered colonies.

The second year spring strength was two frames covered by bees in favor of the sealed cover group, and although the fall strength showed only a variation of three frames, the production was 19 pounds in favor of the sealed cover group. Comparing both of the above cellar wintergroups with the balsam wool outside wintered group shows that the latter was considerably stronger in spring strength the first year and produced considerably more honey for approximately nine more frames of bees present in the fall. The winter loss in weight for the balsam wool outside wintered group was identical to the sealed cover group in the

Another view of the same experimental apiary.

cellar. The second year spring strength, fall strengths, and production of the balsam wool wintered group was practically identical with those same factors in the first year. In comparing the balsam wool group with the sealed cover cellar group in the second year the sealed cover group according to spring strength and fall strength should have produced considerably more honey, unless the population theory or some other factor not presently known enters into the picture.

Increase Colonies

These were fully described in Part I and require no more explanation here and are included in Table II mainly to show their relationship to the weak and strong colonies in their first and second year.

Over-wintered Nuclei Transferred to Full Colonies

Three and five-frame nuclei, constructed by partitioning a ten-frame hive into three or two parts with separate entrances, and establishing in these brood and bees and a young queen in August of each year, was the method used to carry over queens to be used in the division experiment of the three races of bees (Caucasian, Carniolan, and Italian). Previous experience with wintering nuclei in the cellar had shown that extra units had to be established the previous fall to take into account loss of queens in the fall, loss of nuclei during the winter, and the possibility of loss of queens or the development of drone laying queens in the spring. Surplus nuclei with queens were present for three years (1938, 1942, 1943) and consequently these were transferred to full colonies in May to ascertain their honey production potential and then wintered as full colonies the following year.

These nuclei-started colonies, on the average, were one frame weaker in bees than two-pound-package-started colonies. Their fall strength the first year of production did not equal either the increase or package-started colonies and they also had considerably reduced production, but in their second year with considerably less loss in weight they were equal to increase and very nearly equal to package-started colonies. The small number of colonies utilized and the relatively short period of years does not permit drawing any definite conclusions. It does, however, indicate that the trend in this instance is similar to increase, package-started, or weak colonies.

Summary and Conclusions

1. Strong colonies (55 or more frames) and weak colonies (30 frames covered by bees in the fall) when compared over a ten-year period, show approximately a 2:1 ratio of fall strength and production in favor of the strong colonies for the first year and consequently suggest elimination of all weak colonies for over-wintering purposes.

2. Over-wintering both groups of strong and weak colonies, however, shows approximately a similar loss in weight during the winter and similar spring and fall strength, but production in the second year is reduced by 80 pounds for the strong colonies and increased by nearly the same amount for the weak colonies.

Thus indicating that fall strength and production are not necessarily the best criteria for judging which colonies should be over - wintered and which ones should be eliminated. It may, however, tend to explain why so many beekeepers in the past have been overjoyed in the spring with their over-wintered colonies, and disappointed in the fall with the crop produced. The division of over-wintered colonies as outlined in the publication No. 774 entitled "Dividing Over-wintered Colonies for Increased Honey Production" available from the Division of Publicity and Extension, Department of Agriculture, Ottawa, free of charge, would very materially tend to overcome this difficulty and be financially more remunerative for the beekeeper.

3. In a comparatively dry bee cellar, removal of the metal cover and replacing it with bags materially increases the winter loss in weight, results in a lowered average spring strength, and a reduced honey yield.

4. Outside - wintered colonies, packed in pairs in balsam wool and equipped with a top entrance, lose consistently, slightly less in weight during the winter, are stronger on the average in spring strength, and produce a higher average honey crop than cellar wintered colonies.

5. Package-started and increase

(Continued on page 761)

Honey Treats for the Holiday Season

By Mrs. Benj. Nielsen

Cranberry filled honey coffee cake makes a most welcome Christmas gift.

Does an air of mystery hang over the house? Are bulky packages quickly whisked out of sight? Do closed doors muffle excited whispers and suppressed giggles? Then it is time to plan the cook's part of the holiday goodies—for the above are sure harbingers of the yuletide season.

Cooking with honey is a joy at any time of the year and doubly so when holiday festivities demand so much time and energy for last minute details. There is no more suitable or appreciated from-our-house-to-your-house gift than a toothsome honey coffee cake wrapped in its glistening glass baking dish. Equally choice is a lovely bowl heaped with honey popcorn balls, or a candy dish filled with creamy smooth flavored honey candies.

Here are three grand treats. May they add to your holiday gladness—and the best of the season's joy to you!

Cranberry Filled Honey Coffee Cake

Two cups cranberries, ¾ cup sugar, 2 cakes compressed yeast, ¼ cup lukewarm water, 1 cup bran, 1 cup scalded milk, ⅓ cup shortening, ⅓ cup honey, 1 teaspoon salt, 2 eggs, beaten, and 5 cups sifted flour.

Cook cranberries and sugar together over low heat, stirring carefully until sugar is dissolved and skins are broken. Let cool. Soften yeast in lukewarm water. Soak bran in milk; add shortening, honey, and salt and stir until shortening is melted; cool to lukewarm. Stir in enough flour to make a thick batter. Add yeast and eggs, mix. Add remaining flour to make a soft dough. Turn onto lightly floured board and knead. Place in greased bowl, cover and let stand in warm place until double in bulk. When light punch down. Divide dough into two equal portions and roll each into a rectangle about 9 x 12 inches. Spread cranberries over half of each rectangle; fold other half over cranberries and press edges together. Place in greased oblong baking pans and let rise until double in bulk. Bake in moderate oven, 350 degrees F. 25 to 30 minutes. While still warm frost with confectioners' sugar icing and sprinkle with chopped nuts. Yield: 2 cakes 8 x 12 inches.

Honey Popcorn Balls

Eight cups popped corn, 1 cup sugar, ½ cup honey, ¼ cup water, 2 teaspoons vinegar, ¼ teaspoon salt, 1 tablespoon butter, and 1 teaspoon vanilla.

Combine sugar, honey, water, vinegar, and salt; stir until sugar is almost dissolved. Cover; bring slowly to boiling. Remove cover; boil rapidly, stirring constantly, until a small amount of syrup turns slightly brittle when dropped into cold water. Remove from heat and stir in butter and vanilla. Pour syrup in fine stream over popped corn, tossing with fork to coat all pieces evenly. Grease hands lightly. Press coated corn into balls. Wrap at once in waxed paper. Makes 8 balls.

Honey Nut Caramels

One cup sugar, ½ cup honey, ½ cup butter, 1 cup light cream, ½ cup nutmeats, and ½ teaspoon vanilla.

Combine sugar, honey, butter, and ½ cup cream; bring to boiling, stirring constantly. Add remaining ½ cup cream and cook slowly to hard-ball stage. Remove from heat; add nutmeats and vanilla. Pour into greased, 8-inch square pan. Mark in squares when partially cool. Cut when cold. Makes 3 dozen pieces. Wrap at once in waxed paper.

Aurora, Nebraska.

Beekeepers' Short Course in Pennsylvania

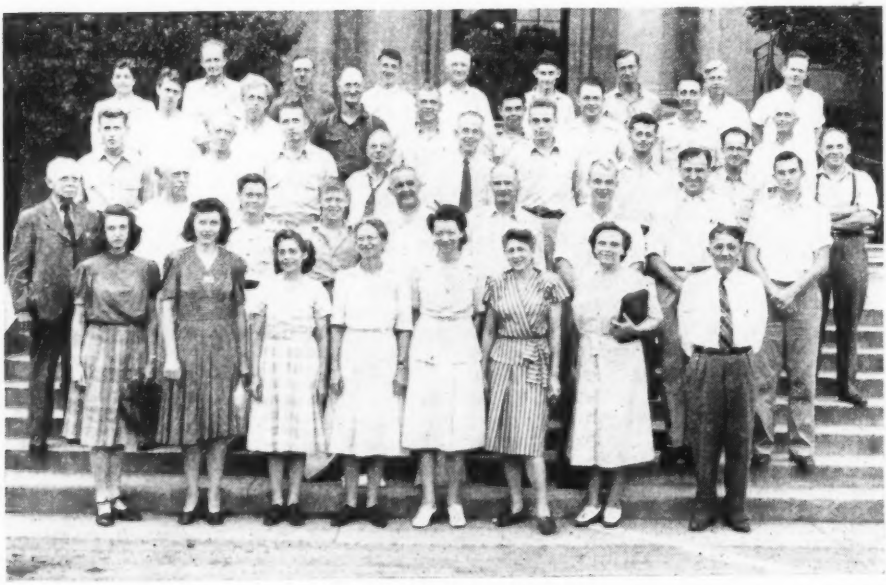
By A. H. Imhof

Prof. E. J. Anderson shows class efficiency of young queens in queen-mating hive at Penn State short course.

A mother-and-son, two father-and-son combinations, and two married couples were among the 44 men and women enrolled in the annual Beekeeping Short Course held at the Pennsylvania State College. E. J. Anderson, College Apiarist, was in charge of the instruction, with George Rea of Reynoldsville, Pa., former State Apiarist of Tennessee, and William Clarke, Extension Apiarist for Pennsylvania, assisting. Of those enrolled, 9 were women.

Every phase of beekeeping from apiary management to processing and marketing of honey and beeswax was included in the week's course of lectures, demonstrations, and practice. Indicative of the extensive emphasis placed on practical aspects of instruction is the fact that **over a ton of honey was extracted by the instructors and students during the week.**

"When students beg for an extra half day of classes, you know they're interested", was the comment Prof. Anderson made at the conclusion of the busy week. He was referring to the special session held Saturday morning at the request of the members of the class.



This class in beekeeping at Penn State College shows a wide variation in age.

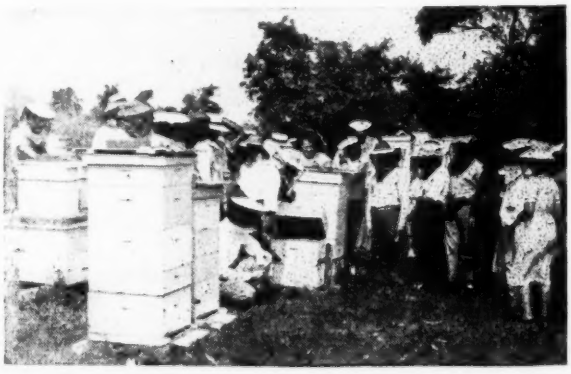
E. J. Anderson placing uncapped comb in extractor as he teaches short course class various details of honey extraction.

Work of the National Federation of Beekeepers was explained by one of its officers, George Rea, veteran beekeeper and former extension apiarist in Pennsylvania, New York, and North Carolina.

Starting off with a tour of the Penn State plant and an examination of processing equipment, the week's schedule included: management practices, swarm control, care and introduction of package bees, ways of taking off honey, removal and handling of extracted honey, value of bees for pollination of fruits, vegetables, and other growing plants, races of bees, methods of requeening, and the value of good stock. Separate sessions were devoted to extracting and bottling honey with small and commercial equipment, studies of honey properties and uses, rendering beeswax, and making candles and similar items.

During the discussions on queen rearing, disease management, American foulbrood and its control, members of the class were treated to some of the intricacies of Prof. Anderson's research in these fields. Results of the experiments to date, much of it still unreported, were explained by Prof. Anderson to the class.

A special fund was established through contributions of the students to pay expenses of two young people to the 1948 short course. The class authorized Prof. Anderson and Prof. Clarke to choose some worthy members of 4-H or Future Farmers of America chapter to be the recipients of the free instruction. It was also announced that some county beekeeper associations in Pennsylvania have also launched plans to pay expenses of young beekeepers for next year's short course.



Short course class at Penn State goes into the field to study management under actual apiary conditions.

American Honey Institute News Notes

By Harriett M. Grace, Director
Commercial State Bank Building
Madison 3, Wisconsin

HOLIDAY GREETINGS! May Christmas bring you joy, and may the New Year be filled with good health and good fortune for you.

* * * * *

Honey for Christmas! It's the sweetest gift of all. You can make sure that your friends and customers will enjoy honey at Christmas and throughout the New Year. Make your gift to each one a copy of OLD FAVORITE HONEY RECIPES or NEW FAVORITE HONEY RECIPES or both. Each book is a treasury of tested honey recipes that every honey user should have.

You may wish to send a gaily wrapped jar of your own honey or a box of delicious honey-made holiday sweets along with the book. In any event, order the honey recipe books you will need now; there's no time to lose.

Make your Christmas gifts ones that give lasting pleasure—the pleasure of using honey.

* * * * *

Now is the time to order honey calendars. Already people are counting the days until spring comes and wondering what the dates for National Honey Week, 1948, are. Everyone needs a 1948 calendar now. Why not make it a honey calendar?

Pocket-size honey calendars are a convenience for everyone, and their daily use is a daily reminder of honey.

Take advantage of this excellent opportunity for year-around publicity. Place your order for honey calendars today; $1 per 100, postpaid.

* * * * *

We have just had another printing of the six-page leaflet, A SWEET COMBINATION, HONEY AND CEREALS.

Our supply of honey literature is now complete, and it's a good time to place your order. Now we can give your order the prompt attention we always like to give. Send for an illustrated price list soon.

* * * * *

Two homemakers purchase honey at the same time. One has a book of recipes for many kinds of good foods made more tempting with honey, and keeps it handy in her kitchen. The other depends on her limited knowledge of honey cookery.

Which homemaker will repeat her purchase sooner?

* * * * *

Tear sheets have been coming in from newspapers throughout the country showing us what an excellent job of cooperation was done in publicizing National Honey Week. The material used was sent to them by the American Honey Institute in behalf of the entire honey industry.

There will be special articles this month in honor of Christmas and the traditional place that honey holds in holiday celebrations. Watch for them in the leading newspapers!

* * * * *

The directory of the American Honey Institute is a list of those who are supporting the work of promoting the use of honey. The names which appear in this directory are the names of those who earnestly desire a wider honey market and an increased demand for their product. They are the names of those who are participating in a program of nationwide action in behalf of the entire honey industry.

Will your name be included? It will if you send in your membership dues before January 1.

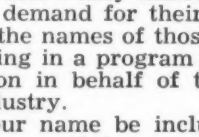
* * * * *

A columnist in a Washington, D. C., newspaper recently recommended honey in a reducing diet, and poetically described its goodness as a delicious food for all. "You can almost taste the flowers of a summer day in it," he wrote!

Maybe that's one reason why honey is such a good year-around food. Honey brings with it summer sunshine, summer flowers, and summer warmth.

* * * * *

MERRY CHRISTMAS!



Live and Learn

By Propolis Pete

One of the first things that a beekeeper learns shortly after he becomes a beekeeper is that his bees are different from any other bees in the world.

Of course this is not so. It only seems so. As a generality, I think that any two bees will react in the same identical way, conditions being identical. That is where the rub comes. Identical conditions occur in exactly the same ratio as identical fingerprints. As the old farmer said when he first saw the giraffe, "There ain't no such animile".

Two hives on the same stand may seem identical. They have the same range in which to work, they are apparently of the same strain, they are the same in strength, the queens are sisters—everything is as close to perfection as human skill can make it. But one of those hives will put up a whopping big surplus and the other nothing. One will not show a sign that they are even thinking about swarming, the other will be a nuisance all through the swarming season.

Why? Who can tell. One little point of difference probably is the cause. These two hives did not have the same queen. Even though they were identical twins, they were not mated to the same drone.

This is given simply as an illustration of the fact that there is no such thing as identical colonies of bees. There are differences, regardless of how slight those differences may be. These differences are the reasons for such erratic results. Imagine then, the differences between your bees and your neighbor's bees, under entirely different influences. Yet, the chances are that your bees, in his location, under his management, would bring substantially the same results as his bees. Reverse the situation and put his miracle bees in your yard under your management, and before very long they would be producing just about the same way that yours did before you swapped. That is, of course, if you have not changed your management in the meantime.

Before you take down your hair and make a pass at me, just remember we are talking theory. I know to my sorrow that there are good seasons and bad seasons. I also know that a difference of only a few miles means a big difference in pasturage. I also know that my dumb management has ruined some mighty good colonies.

Bear all this in mind if you are a this-year beginner or a next-year beginner. Knowledge of these facts may be helpful to you in finding the little tricks of management that will make you a good beekeeper and a successful beekeeper. And, incidentally, before some of the big time operators start sharpening their knives for me, I know that individual hive management is not practical for a big outfit. They have to standardize their routine. They have to figure their results by averages, and their entire scheme of management must be based on what is the greatest good for the greatest number.

Regardless of the size of your apiary, on an overall basis, a knowledge of bee management from actual experience and a knowledge of bee behavior from reading good books and discussion with men who make research their life work, is the best way to get results. A knowledge of theory, backed up by a knowledge of how that theory works out in practice, must be the basis for your success or failure.

Another thing that you are going to learn very soon, if you have not already learned it, is that beekeeping is more subject to fads in management than any other vocation or avocation. But we'll take that up some other time.

PLACING SWARM ON TOP OF FRAMES

By Geo. A. Thomas

When I looked at the picture on page 535 of Gleanings for September, 1947, on hiving a swarm I had to laugh. Ten years ago I started to keep bees and that is how I did it. Now I take off the outer and inner cover and lay the swarm down easy and slowly on top of the frames. The bees go down with a roar and a hurry.

Kingwood, W. Va.

From the Field of Experience

Removing All Covers To Cure Robbing

By V. A. Allen

The cover removal cure for robbing on page 609 of Gleanings for October, 1947, is noted with interest. There is also noted a little note of skepticism, and while it is admitted that the idea is not at first very appealing, I can assure you that it is entirely safe, amazingly fast, and reasonably permanent. About the most impressive example of its effectiveness known to me is one involving my queen yard which is within a few hundred yards of 40 very strong colonies.

Last summer, early on a clear morning following two days of heavy rains, approaching the queen yard I heard the unmistakable hum of robber bees. They were giving a dozen nuclei particular thunder, and it looked pretty bad for a few minutes.

Hastening back to those 40 colonies, I hurriedly removed the covers from them, then returned to the queen yard. Within 15 minutes those robbers had dispersed themselves and the bees were going about their business in a normal manner. The covers were left off an hour and we have not had another case of robbing since.

You may unhesitatingly recommend it as being safe, sure, and speedy, and it is hoped you will try it some time, should the necessity arise.

Semmes, Ala.

20 Swarms Seen During a 25-Mile Drive

By Mrs. W. E. Almond

I drove home about eleven o'clock this morning, October 4. We had a nice rain last night and the air was warm and moist. Slowly driving along the highway, enjoying the autumn beauty, I observed an odd shaped cloud floating low just above the tree line and almost parallel with the highway. I watched closely. The tail or part farthest away moved to the front. The formation was black against the smoke color haze and was moving too fast for a cloud. Could it be smoke? I was tempted to stop the car and watch. It turned and floated into a clump of trees. I drove on puzzled.

The car climbed to the top of a hill and there ahead was another cloud exactly like the first one only much larger. My first thought was: a big flock of blackbirds. On they came, floating rapidly in the same formation as the first but on the opposite side of the highway. I stepped on the gas to meet it. It floated closer to the highway, curled itself into a more compact mass, and suddenly separated into two masses. One moved on northward; the other followed the highway. When we met it was lower and I could see very plainly the cloud was a large swarm of honeybees on their way to a new home.

In the next six miles I saw six swarms of honeybees. One swarm was clustering on a bush at the side of the highway.

I turned off the highway onto a gravel road. A straight eight miles and again I saw the same black formation eight times.

I was not close enough to tell for sure that these were honeybees but they had the same general outline that the first six had, and moved away very rapidly in a sort of twisting, whorling formation.

Again the road turned and I saw six more swarms. I observed one large hedge tree in a pasture that had three swarms. A very large swarm at the top, flying from the tree top straight into the sky and one on either side of the tree lower down.

I watched one swarm hover above the top of a tall pine tree. They flew in a ball shape—top bees fly-

ing under the mass and the bees on the bottom flying to the top again and again. They didn't settle in the pine tree.

Twenty swarms of bees I observed in my 25-mile drive. All swarms were large and all flying east or just a little north of east.

I began to doubt my eyes. I don't drink, and I don't understand why so many bees would be looking for new homes on October 4 in a community that has only a few colonies of bees and not very much good bee pasture. Where did they come from? Could I have been mistaken?

Holden, Mo.

[Conditions just prior to your seeing the swarms must have been favorable for swarming. October seems late for swarms to issue. We naturally wonder what will happen to all the swarms this winter—how many will be alive by spring, and how many virgin queens left where the swarm came from will mate successfully so late in the season.—Ed.]

"The Coloration of Anther and Corbicular Pollen"

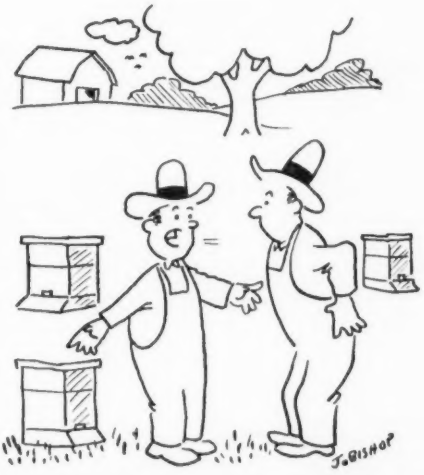
The Ohio Journal of Science for July, 1947, contains an exhaustive study on the above subject by R. Reiter, who, in the course of his work, consulted some 30 books, magazines, and bulletins.

Anther pollen is that observed on the flower parts, while corbicular pollen is the name used to describe that packed on the corbicular or pollen basket on the legs of the honeybee. The author states that very little attention has heretofore been given to the difference in color of the pollen as seen on the blossoms and as seen on the legs of the bee. Some pollens contain water-soluble coloring materials, others, fat or oil-soluble coloring materials. The water-soluble color would be absorbed by the honey, while the fat-soluble color would have some influence on the color of wax. Using a standard color chart, the author identifies the colors of both types of pollen by color matching.

After two season's field work, 146 specimens examined reveal 10 general classes of color, as yellowish red, red yellow, yellow, greenish yellow, etc., and about 100 distinct hues as cherry red, coral red, henna, rustic brown, etc. Only 1.5% of the pollens examined were observed to remain unchanged in color when packed by the bee in the pollen basket. Changes in color may be due to decrease in saturation or a decrease in brilliancy, or both, and the changes are significant, according to the author's summary.

The last paragraph from the summary gives the reasons for the change:

"Brilliancy's decrease is the important factor in the change of color between anther and corbicular pollen. The decrease is caused by a change of surface texture in the pollen masses, the addition of moisture, absorption of light waves by the honey used in packing the pollen, dilution of water-soluble pigments, and the addition of foreign matter. Hence corbicular pollen differs in color from its corresponding anther pollen."



"I'm keeping bees on shares—the owner gets the honey and I get the work."

XUM

Second Glances

By C. M. Isaacson

The first step in wintering is to have one's colonies in the right condition, says Roland Heacock (page 641). Of course he is right. "Not how you pack but what you pack" is an excellent axiom for all who believe in protecting their bees with some form of packing, for no insulation will make up for a weak colony or one low in stores. Next in importance—at least for northern climates—is some form of upper entrance ventilation. But as regards cellar wintering, that one item of, "I have lugged many a colony indoors and saved its life in mid-winter", speaks loudly. Even though I have followed the path of least resistance, like many others, and left cellar wintering for outdoor packing when my bees began to be scattered over many miles, I still believe that a **good** cellar is preferable to any method of outdoor protection in our climate. And may I mention how much I like the "extra" words of the article? We need to be reminded with a bit of philosophizing of the beauty and spirit of our profession.

The improvised equipment described by Mr. Harvey may give ideas to many another beekeeper in need of help. That double boiler made of two tubs is a clever and useful improvisation, and the uncapping tank also shows ingenuity. But the best of all, perhaps, is the willingness to share the results of his experience. More power to you, Mr. Harvey (page 646).

Arsenicals are most dangerous to beekeeping and DDT can be a benefit if used properly because it eliminates the need for the more injurious poisons, says the article on page 648. This is in line with many reports on the same subject, as is the objection given against dusting instead of spraying. But the warning as to the new weed killer—2,4-D—tells us that we have another danger entering our field — one that may well prove the most serious of all.

Bear damage in the apiary can be very extensive, as quite a few beekeepers can testify. And it is true that a poor electric fence is useless. One must have at least three or four wires, the lowest one stretched tightly and grounded (not connected to the power as are the others, of course). And one beekeeper I know believes that it is of value to have the controller mounted so that the bear can see the bulb flash and hear the click of its operation—that he will be wary of anything he does not understand. Of course a trapped (and destroyed) bear is through with bee yard maraudering; there is that to be said in definite favor of Mr. White's contention (page 652).

"And here I am." To me, that one phrase is the gist of Propolis Pete's article this month. It tells much. So many of us often wonder why we stay in a profession with so many ups and downs, so many different systems, conflicting advice, and decided (opposite!) opinions, problems galore that seem to have no end—oh many, many things that should make us say "no more of this for me". But "here we are". There **is** something about beekeeping — (page 655).

Outdoor wintered colonies are stronger and the mortality is actually less. This last may surprise many, including myself, for I have always believed that a colony that would die outside could be wintered in a cellar—in fact, I have wintered three-frame (shallow) queen nucs successfully before I began outdoor packing (page 657). But here are the results of ten years of experiment and observation. This article is certainly very comprehensive, and the results reported should be accurate at least for the locality of the experiments. And one observation (among many) that I can report similarly on: that production is not necessarily in direct proportion to spring strength. The succeeding article should be of much interest to any beekeeper in a northern territory.

Should hives face south? All in all, I would say yes. Mr. Morehouse has a point in the fact that many bees fly out and are lost from hives placed thusly, but I have always believed that these were mainly older bees and that the colony does not suffer unduly from their loss.

Thief River Falls, Minnesota.

80 Years Among the Bees

By E. R. Root

The Heresy that Sugar Syrup Was the Best Winter Food

In the last issue we showed how for nearly a decade A. I. Root and practically all of the other authorities on general beekeeping held that sugar syrup was a better food for wintering bees than good honey sealed in combs. I well recall the time when A. I. Root ultimately stated that he was convinced that the food the bees provided, honey, was a safer and far better food for bees during the inactive period of winter than was sugar syrup. He was backed up by no less authority than Dr. C. C. Miller that straight Coffee A sugar—that is, pure sugar —was not a balanced ration and it took some years to show that adult bees need something more than sugar because in honey there are elements such as minerals and a small amount of vitamins that are essential not only for the larvae of the honeybees but for the adult bees as well. But it took years to convince the beekeepers at large that the food that nature provided is greatly superior to the one-sided food like sugar syrup.

Although one may believe that ordinary honey sealed in the comb is perfect food for the bees, we often do not have enough of it and therefore are compelled sometimes to feed in the fall and during the winter months to prevent actual starvation.

A. I. Root early found that it was a mistake to feed bees warm sugar syrup during the middle hours of the day when perhaps the sun is shining but when it is too cold for the bees venturing out to return to the hive. If a large amount of sugar syrup is supplied whether the sun is shining or not, the bees will rush out to find the source of supply not knowing that they could not stand the freezing temperature which would prevent them from flying back. The real truth is not discovered, because the dead bees on the ground and in the grass are not seen. When snow appears the beekeeper can see literally thousands of bees—enough to reduce the force of bees materially in all the hives fed during the severe weather. This loss can be prevented by feeding only at night and not too much; only the amount the bees can take up before daylight should be given.

A. I Root was the first to recognize that combs of sealed honey placed close to a cluster will keep the bees from rushing out of the hive into the freezing air, as they will do if a thin sugar syrup is provided. He likewise discovered that rock candy can be given with perfect safety to bees during mid-winter. They take only a little at a time and naturally come to the conclusion that it is a stored product like sealed honey. They cluster on it and the moisture already in the hive allows the surface of the candy to become sticky so the bees can take it just fast enough. Experiments showed that rock candy is a very suitable food but lacks some important elements found in honey such as minerals and proteins. Because of the lack of the latter A. I. put in common flour but later found rye meal to be better. It is evident had he known about soybean flour he would have used that. Back in the early 70's he furnished this formula for making rock candy. It is important to emphasize that there is great danger of burning the candy or "scorching" it, as Father used to say. This ruins it. A slow heat should be used and samples tested occasionally.

A. I. Root's Recipe for Rock Candy

You will need some sort of a saucepan (any kind of pan with handle attached will do) that will hold about 10 lbs. of sugar. Put in a little water—no vinegar, cream of tartar, or anything of the sort is needed, in spite of what others may tell you—and boil it until it is ready to sugar off. You can determine when this point is reached by stirring some in a saucer, or you can learn to test it as confectioners do by dipping your finger in a cup of cold water, then in the kettle of candy, and back into the water again. When it breaks like egg shells from the end of your finger, the candy is just right. Take it off the stove at once, and as soon as it begins to harden around the sides give it a good stirring and keep it up until it gets so thick that you can just pour it. Pour it into your frame and get in just as much as you can without running it over. If it is done nicely the slabs will look like marble when cold and should be almost as clean and dry to handle. If you omit the stirring, your candy will be clear like glass but it will be sticky to handle and will be very apt to drip.

A. I. Root found he could supply

(Continued on page 747)

A Talk to Beekeepers

By M. J. Deyell

Keeping Scale Hive Records

Speaking of the inactivity of bees at this season of the year, I have been tabulating daily weights of the colony on the scale hive near my office. During the past twelve days the hive has lost one and one half pounds, which is in line with records I have kept during former years. This amounts to an approximate loss of four pounds a month, which is approximately two ounces a day.

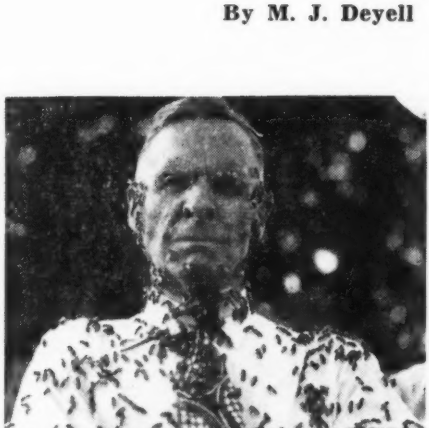
This scale colony is a large one. It put up 60 pounds of honey this past season and the hive must contain at least 25000 bees at present. Of course there will be considerably less than that amount early next April.

When we stop to consider the fact that 25000 bees consume only two ounces of honey each day, that does not amount to much honey per bee. At any rate, honeybees cannot be accused of over-eating.

I found from referring to past records on scale hive weights that the loss in weight per day, week, or month increases after the first of the year. In this locality queens begin to lay a few eggs the latter part of January and gradually increase brood rearing during February and March. The honey used for feeding young blood helps to account for the increasing losses in weight of the scale hive as spring approaches.

Of course there are factors to be taken into consideration besides the consumption of honey. The weight of the hive may vary somewhat according to the amount of humidity in the atmosphere which would have an effect on the weight of the hive. Also, some of the old bees die off during the winter and this loss in dead bees would account for some of the total loss in hive weight.

When brood rearing begins early in the spring, this would have to be taken into consideration in the matter of daily losses in hive weight. The honey used for brood rearing is converted into brood and eventually into young bees. And so when we refer to daily losses in the weight of a scale hive there are a number of factors that have to be taken into consideration.



Those who think this is just fun should try it some time.

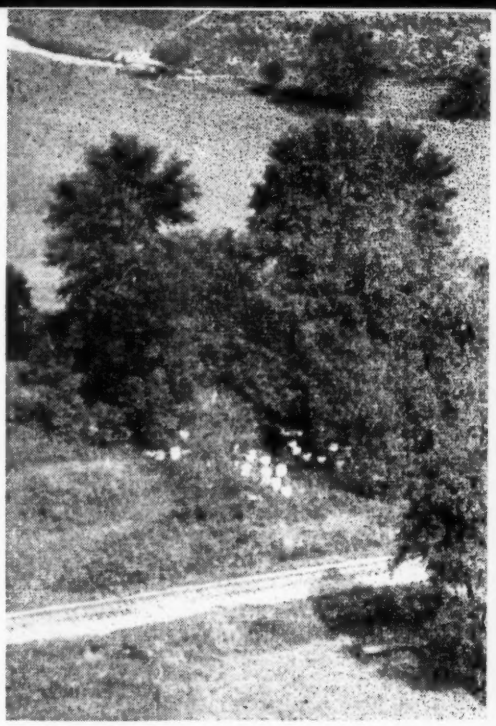
What man wouldn't be covered with bees for such a reward as this?

Covered with Bees

Last fall, September 14 to be exact, I attended the North Jersey Beekeepers' Association Meeting held in the apiary of the president of that organization, R. Parker Hamilton of River Edge Manor, New Jersey. Over 100 people, mostly beekeepers, were in attendance. The day was beautiful, the bees were flying well, and so Mr. Hamilton de-

cided to put on a little show involving the handling of bees, for the amusement of those present.

To my surprise,, Mr. Hamilton asked me right out of a clear sky if I would lie down in front of one of his hives and permit him to remove a few of the combs with adhering bees from the hive, shake the bees onto a stiff cardboard paper, and then pour them over my head and shoulders. At first I hesitated and then replied that I would permit him to do that to me if he in turn would permit me to do it to him. It was a bargain. Mr. Hamilton insisted, however, that I be the first victim. The crowd, of course, some of which were not familiar with the behavior of bees, gathered around as closely as they could without danger of getting stung. Some of the people apparently thought I was about to be stung to death.



The Editor's apiary viewed from a plane. This apiary is located on a south slope so is protected from the north winds.

I must confess that I did not enjoy having bees crawl into my ears, up my nose as far as they could go, then back out again, and also get into my hair. Strange as it may seem, I received only one sting and that was due to the fact that a bee crawled up my sleeve and got pinched between the shirt sleeve and my arm.

The picture shows me after most of the bees had left my hair and had gone down a little lower. The bees almost spoiled a good white shirt, but other than that I was none the worse for the experience.

When it came to my turn in administering the bees to Mr. Hamilton, I secretly hoped that he would get at least one sting around the eyes or nose, but if he did he didn't tell anyone about it.

You will see from the picture of Mr. Hamilton with the bees around his head and neck, that the young lady engaged in the osculation act apparently did not mind the bees. Judging from the look on the face of the man standing directly back of Mr. Hamilton, this gentleman wished he could be in Mr. Hamilton's shoes just at that moment.

It was plain to see that Mr. Hamilton is a lady's man. I am not, because none of the ladies came near me while I was covered with bees, nor did they come near me after the bees were brushed off.

A Little Trick in the Trade

Possibly those present did not realize that the bees, being shaken from the combs onto the stiff cardboard paper before being put on our heads, were taken out of their natural environment and became demoralized.

Our Mr. E. R. Root was on the Chautauqua platform for four years lecturing on honey and bees. He carried with him a two-frame nucleus of bees with queen. During his lecture an assistant would open the small hive of bees on the stage, remove a comb covered with bees, making sure that the queen was not on this comb, then handed it to Mr. Root who shook the bees off the comb onto a newspaper laid on the floor. He would take the corners of the newspaper, lift it up with the bees, then jounce them up and down in a mass to demoralize them. He would then pour the bees from the paper into his straw hat, then place the hatful of bees on his head very carefully. He seldom received a sting. He would then offer to place the hat of bees on the head of some bald man, but none volunteered. The audience, of course,

(Continued on page 748)

Asked and Answered

What to do with Partly Filled Supers

Question:—On the 13th of October we extracted the honey from our 10 hives, then put the supers back on the hives for bees to clean up. The hives have a deep food chamber. This year for the first time they have started to put honey into the supers instead. We are afraid if we leave the third super on over winter it would be too cold for the bees. Could we store the combs of uncapped honey in the house and put them back on the hives in March for brood rearing? Will the honey hold that long? The frames are almost new including the combs.—Joseph Bochsler, New York.

Answer:—It seems apparent that you must have been having an aster flow after you put empty supers back on double story brood chamber hives to get cleaned up following the extraction of honey. Our suggestion is that you leave these partly filled supers on top of the hives, above inner covers with center blocks removed, so that during cool weather the bees may carry some of the honey down out of the partly filled supers into the brood chambers below. It would be all right to eventually remove these partly filled supers, store them mouse proof in some building during the winter, then put them on as early in the spring as is necessary to provide additional comb space for brood rearing and incoming nectar. It is customary to let each queen have the run of three supers during the spring months, especially where colonies are wintered each with a deep food chamber.

Location and Size of Upper Entrance

Question:—I have been reading in your magazine about two entrances in a hive. You do not give the size of the top opening or where it is located. As a beginner I would like more information about the size and location of the top opening.—W. H. Edmonson, Virginia.

Answer:—If you will turn to page 669 of the November, 1947, issue you will find at the bottom of the page a picture of a double-story hive with a top entrance. As you will see, this is made by cutting a notch in the rim of the inner cover and turning it upside down. The outer or telescope cover, when placed on the hive, is pushed forward as far as possible to permit the bees to get out and in through this entrance. There is enough space between the front of the hive cover and the front of the hive for bees to pass through. Some make an upper entrance by boring a ¾" or 1" hole through the hand hold on the hive, or a little below the hand hold. This is called an upper entrance and is used by the bees during the winter months, especially if the lower entrance happens to get clogged.

Use of Tartaric Acid in Bee Syrup

Question: — When bees are being fed the sugar and water solution, is there anything that can be put into the syrup to keep it from solidifying? — I. Thurston Knight, Pennsylvania.

Answer: — When feeding thick syrup to bees in the fall it is a good idea to add ¾ of an ounce of tartaric acid to each 25 pounds of sugar, the acid to be stirred in with the sugar syrup while it is hot. This acid retards or prevents granulation of the syrup in the combs. Furthermore, when friction top pails are used for feeding syrup, the acid prevents the syrup from granulating over the holes in the lid of the cover.

The Correct Bee Space

Question: — What is the correct bee space? I read where one person claimed better results by using nine evenly spaced frames in a 10-frame hive. Would it be possible to obtain an average of measurements between combs in a box hive just as the bees built their combs?—Robert J. Collins, Connecticut.

Answer:—Regarding a bee space, this should not be less than $\frac{5}{16}$" or more than 5/16" or ⅜". If we could maintain a ¼" bee space between and around combs, this would be about right. Most beekeepers space the combs in a 10-frame super, nine to each super, in order to have the cappings of the combs built out a little beyond the end bars of the frame to facilitate easy uncapping. We like to have 10 frames in a 10-frame hive used as a brood chamber, although some use nine frames in each 10-frame brood chamber.

Straining and Processing Honey

Question:—Is there any better method of straining honey than heating it and running it through four or five thicknesses of cheesecloth?—J. W. Reed, Texas.

Answer:—The method of straining heated honey through two thicknesses of fine cheesecloth seems to be quite popular and satisfactory. There are, as you doubtless know, different kinds of cheesecloth. Some have a fine mesh and others have a coarse mesh. A fine mesh cheese-

cloth is desirable. After the honey leaves the strainer if it can run down a baffle board to strike the side of the can rather than be permitted to fall through the air, the honey will not absorb as much air and consequently there will be less air bubbles in the honey after it has been allowed to settle. If the honey is for local consumption it is unnecessary to make the honey too hot before straining. However, if the honey is to be put in jars for grocery shelves, it should be brought to 160 degrees Fahrenheit and kept at that temperature for about 20 minutes. This heating destroys all yeasts that may be in the honey which may cause fermentation if not destroyed. Furthermore, heating does retard granulation.

Bad Weather Encourages Swarming

Question:—I have six stands of bees which came through the winter with plenty of food, and the last of April they were very strong and all the queens laying fine. In June every hive swarmed out. This is the first time it has happened in 10 or 12 years. Four of the colonies had clipped queens. Was it caused by the unusual amount of rain and wet weather we had all during the month of May?—T. G. Lovelace, Illinois.

Answer: — Your swarming this year was likely caused by unusual weather conditions. Had the weather been favorable for a normal honey flow, there probably would have been much less swarming. Intermittent nectar flows with hot sultry weather encourages swarming.

Feeding Bees in a Cellar

Question:—I am wintering 30 colonies in my basement. There is no furnace and I am able to keep the temperature right. Am wintering in 8-frame two-story hives, but will be short of honey in the food chambers of some hives before April when we can set them out. They are quiet. I want to feed them before April. I have given them the last honey in combs that I had beside what was in their two hive bodies. Would sugar syrup as we feed in the spring be all right? These bees have had no flight since October. Would you suggest using it liquid or mixing with soybean flour in cakes on the frames?—Mrs. Mary E. Houx, North Dakota.

Answer:—It seems probable that the weather in your state is cool enough to keep the 30 colonies in your basement contented. It is during a warm spell that bees in a basement or bee cellar become restless. If you are sure that some of your colonies in the basement need food to keep them alive until they are set outdoors early in spring, you should feed them sugar syrup made of two parts granulated sugar to one part of water. You may use a regular bee feeder or a friction top pail. So long as the bees would be set outdoors soon after being fed, the feeding ordeal should not be detrimental to the bees. It would certainly be better to feed them indoors where the temperature is reasonably high—between 40 and 50 degrees Fahrenheit —than it would be to attempt feeding them outdoors where the temperature would be rather low—in fact, too low for bees to take syrup readily. We would not advise feeding soybean flour or other pollen substitutes to bees in a cellar.

Tongue Reach of Bees

Question: — We raise red clover, and would like to know the different varieties of bees which are longer tongued and gentle.—G. R. Zeilinger, Nebraska.

Answer:—There are some strains of Italian bees that have longer tongues than the general run of Italians. We had one queen that we called the "Red Clover Queen" because her bees would gather honey from red clover when other bees would pay no attention to it—probably for the reason they could not reach the nectar. Caucasians have the reputation of having longer tongues than the ordinary strains of Carniolans or Italians. They have not, as yet, established the reputation for producing honey from red clover, but on the basis of tongue reach they ought to be better on red clover than the average run of bees —either Italians or Carniolans.

Where to Get the Seed

Question:—On page 374 of Gleanings for 1935, in the paragraph headed "Where to Get the Seed", it is stated that one may obtain chemically pure dextrose and mix it with honey that has been heated, in order to cause the honey to crystallize. Since the proper proportions for such a mixture were not given, I wonder if you would advise me on this point.—Lawrence A. Horan, Mass.

Answer:—The seed can be obtained from pure dextrose crystals which you can obtain from any large druggist. Say that you want the chemically pure dextrose. Only a very little will be required in a pint of honey at a temperature of 57° F. This is sometimes referred to as "seeding". You can also get seed by grinding up coarse crystal honey. Grind it very fine. The small fragments will reform in fine small crystals that will make a smooth creamed honey.

Annotations

By Prof. A. Z. Abushady
United Nations, New York

Substitutes for Arsenicals — Beekeepers in the East, and particularly in Egypt, will read with great interest the article by Dr. J. E. Eckert (p. 648) on the Relation of Agricultural Chemicals to Beekeeping, since many colonies of bees are either wiped out or seriously depleted through arsenical poisoning year after year where cotton pests have to be fought with dusting or spraying. Considering that cotton honey is an important crop in the Nile Valley, the assured season for which may last as long as three months, and in view of the menace to the beekeeping industry through the extravagant use of arsenicals, it is high time for the "Bee Kingdom League" in Egypt to demand the proper use of substitutes. Dr. Eckert assures us that the recent substitution of DDT, Chlordane, 666, and others of the newer chemicals, for the arsenicals has not only increased the efficiency of insect control, but has greatly reduced the hazards arsenicals have caused to beekeeping and to other agricultural interests. There is no excuse therefore for jeopardizing the interests of beekeepers. Arsenical dusting and spraying in honey producing areas should be prohibited by law, and furthermore the treatment of flowering plants, by whatever insecticide, should be done **before** blooming.

Wintering the Bees—Mr. Roland T. Heacock's review of the factors for successful wintering in the light of his experience (p. 641) is instructive and interesting, and I am inclined to agree with most of his observations. A point that needs elucidation, however, is the question of hive space in relation to safe wintering. Suppose the bees densely cover ten standard combs in the fall, is there any advantage in wintering them over 20 combs, the extra ten combs being of capped stores, or would it mean the dissipation of the cluster heat and unsafe wintering, particularly in a standard single-walled hive? My successful wintering over 20 combs (ten of which contributing to a food chamber) will not lead me to assume that it is a good method everywhere, inasmuch as my experiences are limited to Egypt, England, and New York.

Goldenrod Honey—I can testify to Mr. Heacock's praise of goldenrod honey for wintering (p. 642). For two seasons here it was a delight for me to see this fascinating plant growing wildly and secreting freely, whereas it was being carefully sown and cultivated in some of the gardens of Alexandria, Egypt. In taste and aroma, I think goldenrod honey deserves to be regarded as one of the best medium honeys.

Mead as an International Drink—The "Bee World" for October gives a comprehensible editorial on the simplified preparation of mead which deserves perusal and application. Considering the interest of beekeepers in finding outlets for their honey crops in various industries, apart from direct consumption, is it not logical to endeavor popularizing mead as an international drink and to foster its manufacture, diverting to it honeys that are not suited for table use?

National Hives—There is a relapse towards the creation of so-called standard National hives, through the influence of national beekeepers' associations or institutes, an example of which is displayed in Prof. Rizga's contribution in the October "Bee World" (p. 71). When critically examined, not one of these hives offers advantages over the international Langstroth system which affords a basic unit for practice, study, and comparison in all countries, and permits all sorts of manipulation in the simplest of ways. The other kindred relapse is a strange "national" interest in local bees, instead of taking advantage of standard races that have proved their worth and adaptability in different localities and under various conditions.

Just News

C. J. Baldridge of Kendaia, N. Y., one of the pioneer commercial beekeepers, passed away November 5. Years ago he was a frequent contributor to these columns. Gleanings extends sympathy to the family.

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The Tennessee State Horticultural Society will hold a meeting December 10 to 12 at Hotel Patten, Chattanooga.

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The annual meeting of the Oregon State Beekeepers' Association will be held at Corvallis, Oregon, on December 5 and 6. The sessions will be held in the Union Memorial Building on the Oregon State College Campus. A banquet will be held at the Benton Hotel on the evening of the 5th.—John D. Burt, Sec.

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The Annual Business Meeting of the Michigan Beekeepers' Association will be held at the Peoples' Church, East Lansing, December 11, 1947, at 9:30 A.M.—Alex Bzenko, Recording Sec.

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The Westchester County Beekeepers' Association will hold a joint Christmas party and meeting at 2:30 P.M. on Sunday, December 21, 1947, at the Odd Fellows Hall, 20 Lockwood Avenue, New Rochelle, N. Y. —B. F. Miller, Publicity.

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Bronx County Beekeepers' Association will hold its Christmas meeting at the home of Mr. Herman Wilde, 30 West 190 Street, on Sunday, December 14, 1947, at 2:30 P.M. Santa Claus will be at the door to greet all who come.—Sam Roberts, Sec.

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The Indiana State Beekeepers' Association meeting will be held December 11 and 12 in the west room of the Indiana State War Memorial Building at 431 N. Meridian St., Indianapolis.

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Annual meeting of the **North Dakota Beekeepers' Association** will be held Friday, December 12, at the North Dakota Agricultural College, Fargo, N. Dak.—Arvid P. Benson. Sec-Treas.

The annual meeting of the **Apiary Inspectors of America** will be held in Salt Lake City, Utah, January 14 in conjunction with the annual meeting of the National Federation of Beekeepers' Associations which follows on January 15 and 16. The program will center around regulations governing interstate shipments, the bee poisoning problem, and recent developments in control of bee diseases. All regulatory officials connected with apiary inspection should make a special effort to attend this meeting.—J. A. Munro, President.

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A Beekeepers' Program will be held January 2 in Room 103 of the Agricultural Hall, Lafayette, Indiana, during the Annual Purdue "Ag" Conference. A worth while program is in the making. J. M. Amos State Apiarist of Tennessee is the out-of-state speaker. A cordial invitation to all.—B. E. Montgomery, Asst. Prof. of Entomology.

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The Southern Tier Beekeepers' Association, consisting of beekeepers of the southcentral counties of New York State, recently organized with Howard Webb of Port Crane as president, Roy Pierson of Triangle as vice-president, and Russell P. Easton of Binghamton as secretary-treasurer.

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The annual meeting of the **Western Idaho Honey Producers' Assn.** was held in Nampa, Idaho, on Nov. 7, 1947. Topics of general interest to the honey producers were discussed and the following officers were elected for the coming year: President, Chas. A. Williams, Meridian, Ida.; Vice-Pres., H. M. West, Boise, Idaho; Sec. - Treas., E. L. Sprague, Caldwell, Idaho. — C. J. Feeler, Nampa, Idaho., Supervising State Bee Inspector.

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The North Jersey Beekeepers' Association opened its winter season with the largest indoor meeting ever to be held in the state, with 183 members attending. The First Annual Honey Exhibition proved a most unusual success, and awards

(Continued on page 760)

The National Federation Annual Meeting

On to Salt Lake City, Utah, January 15 and 16, 1948.

In the heart of Salt Lake City, Utah, is the world famous L.D.S. (Mormon) Temple Square. Within this walled ten-acre plot are the spired Temple, which required 40 years to build; the oval-roofed Tabernacle, with a seating capacity of 8000; an Assembly Hall; a Museum, filled with pioneer relics; and other interesting structures. (Photo courtesy of Chamber of Commerce, Salt Lake City.)

Salt Lake City, capitol of Utah and one of America's most interesting cities, is prepared to welcome members of the National Federation of Beekeepers on January 15 and 16, 1948.

Salt Lake City is recognized as one of America's most interesting municipalities and has become a living, practical monument to the faith and courage of a people. No feat of pioneering in American history revealed more resourcefulness than the westward trek of the Mormons and their building of a civilization in the Utah wilderness. Since unflagging industry has been a trait of these people down to current times, it is not surprising that on the ancient lake flats which Brigham Young selected as a final refuge there has arisen one of the outstanding cities in the nation.

Today Salt Lake City is a cosmopolitan state capitol, a world mining center, and hub of a tourists' paradise. The stamp of the Mormon character is still strongly imprinted on the life of the town, even though non-followers of the faith now number about 60 percent of the 245,000 residents in the metropolitan area.

Salt Lake City lies on a plateau at the foot of Wasatch Mountains, 4300 feet above sea level, 742 miles west of Denver. On all sides citizens can view a horizon broken with mountains that appear to cut it off geographically from the rest of America. Actually, however, it is the distribution center for the state, and four railroads and many highways reach through canyons into its valley. Airlines, too, serve it extensively. It is a tourist center, as outdoor recreation and peerless scenery in national parks and forests are abundantly supplied throughout this region. The ski area at Alta, and the salt flats where the city's ex-mayor, Ab Jenkins, and John Cobb of London, England, set world auto-

mobile speed records, are among the magnets which draw visitors.

At least two of Salt Lake City's landmarks are known the world over—the Tabernacle and the Temple of the Church of Jesus Christ of Latter-day Saints. The former with its enormous turtle-shell roof, the world's largest having no supporting pillars, seats 10,000 persons. The richly spired Temple, of Utah granite, cost more than $4,000,000 during 40 years of elaborate construction. Here are held many of the ceremonies of the Latter-day Saints; non-Mormans are barred from the interior at all times. Among the downtown buildings the Hotel Utah is widely known.

The story of this metropolis is linked inseparately to the story of the state and the Mormon life and religion. Brigham Young's followers reached the valley in 1847. The next year a visitation of crickets threatened the loss of the Mormons' crops, but this disaster was averted by immense flocks of seagulls which flew in from the Pacific and devoured the insects. Seagull Monument was erected in Temple Square October 1, 1913, as a tribute to the birds.

Few places in the entire world offer such opportunities for wonderful skiing so close to a metropolitan city and for so long a season as Salt Lake City offers. In the heart of the deep snow country of Utah's Wasatch Range, Salt Lake City is rapidly gaining fame as the winter sports center of scenic America. Lowell Thomas, renowned commentator, described the skiing at Alta, just one hour from Salt Lake City, "the best I have ever experienced".

Program of Annual Meeting

January 14

10:00 A.M. Apiary Inspectors of America

10:00 A.M. Committees of Nat'l. Federation
- Executive Committee
- Honey and Pollen Plants Committee
- Agricultural Relations Committee
- Honey Grades Committee
- Bee Breeders' Committee
- Research Committee

January 15

8:00 A.M. Registration and Sale of Banquet Tickets

10:00 A.M. Business Session
- Minutes of Tampa Meeting
- Report of Sec.-Treas. Glenn O. Jones, Atlantic, Iowa
- Appointment of Committees
- Address of President Woodrow Miller, Colton, Calif.

11:00 A.M. Marketing in 1948
- R.F. Remer, Sioux Honey Assn., Sioux City, Iowa
- D. B. Bradshaw
- R. D. Bradshaw & Sons, Wendell, Idaho

12:15 P.M. Recess for lunch

1:30 P.M. The Longtime Program with Honey and Pollen Plants
- R. B. Willson, Chairman Honey and Pollen Plants Committee, New York, N. Y.

2:00 P.M. The Influence of Honeybees on the Soil Conservation Program
- Dr. H. H. Bennett, Chief Soil Conservation Ser. Washington. D. C.

2:30 P.M. Honeybees and Agricultural Prosperity in Utah
- Director R. H. Walker, Agr. Experiment Station, Utah State Agr. College, Logan, Utah

3:00 P.M. The American Honey Institute
- Mrs. Harriett M. Grace, Director, Madison, Wisconsin

3:30 P.M. Honey Grades Committee
- Dr. E. J. Dyce, Chairman, Ithaca, N. Y.

3:45 P.M. Control of Weevil in Sweet Clover and Alfalfa
- Dr. J. A. Munro, North Dak. Agr. College, Fargo, North Dakota

4:00 P.M. American Beekeeping Council
- Roy A. Grout, Secretary, Hamilton, Illinois

4:30 P.M. Program Designed to Adequately Support our Institutions
- Lloyd C. Gardner, Chr. Nat'l Council of Honey Marketing Cooperatives, Delaware, Ohio

6:00 P.M. It is suggested that each of the ten regions hold a dinner meeting to discuss common problems and to elect a representative to the Executive Committee for the coming year

8:00 P.M. Some last minute changes have become necessary, but an interesting evening is in process of arrangement

January 16

9:00 A.M. Report of
- Auditing Committee
- Resolutions Committee
- Nominations Committee

10:00 A.M. Outdoor Recreation and Insecticides
- William Voigt, Jr. Western Representative Isaac Walton League of America, Inc. Denver, Colorado

10:20 A.M. Subject to be announced
- C. S. Harris, Entomologist, Shell Oil Company, New York, N. Y.

10:45 A.M. New Insecticides and Their Effect on Pollinating Insects
- Dr. George F. Knowlton, Entomologist, Utah State Agr. College, Logan, Utah

11:15 A.M. What the Agricultural Relations Committee Does for the Beekeeping Industry
- Dr. J. E. Eckert, Apiculturist, University of Calif.

(Continued on page 748)

Editorials

Gleanings Policy

On questions affecting the advancement of beekeeping, Gleanings tries to give full publicity without necessarily sharing the opinions of writers. Responsibility can not be assumed by this journal for all signed or quoted contributions.

Bee Goals for 1948 As Gleanings goes to press we have a statement from the U. S. Department of Agriculture, Washington, D. C., to the effect that the Department proposes to beekeepers of this country a 1948 goal of 6,087,000 colonies of bees which would provide 3 percent more colonies than the 1947 preliminary estimate.

Because of the more widespread use of poison sprays and dusts which are rapidly lessening the number of bumblebees and other wild bees, the pollinating needs of the country would justify a much larger bee goal. As bee supplies will be difficult to secure, the goal is being kept down to a reasonable figure. We shall aim to have further details in the January issue.

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What About Sulfa? Reports from over the country regarding sulfathiazole for the control of AFB continue to come in. Some claim 100% success thus far; others report some recurrence of disease.

At the Toronto (Ontario) meeting held Nov. 10 to 12, C. B. Gooderham, Dominion Apiarist at Ottawa, reviewed briefly experiments conducted in feeding sulfa. Approximately 50% of diseased colonies treated have apparently cleaned up and 50% are still diseased, following two seasons of experimental work. Mr. Gooderham says sulfa seems promising but more work needs to be done under proper supervision. The weak point in any treatment is the human element.

In a recent letter from Prof. L. Haseman, who originated the sulfa treatment, he says:

"Messed up AFB combs should continue to be melted down and replaced with combs from supers or full sheets of foundation, for bees are worth more gathering nectar than cleaning house. State apiarists should take charge of sulfa feeding, as veterinarians do with blackleg and other diseases of livestock".

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Honey Market It is a little difficult to get a true over-all picture of the honey market at the present. It would seem that prices are holding up quite well in spite of the availability of sugar and other sweets.

In some regions of the North, beekeepers secured a considerable amount of surplus from buckwheat, goldenrod, aster, and other fall plants. While there is some demand for the darker honeys in certain markets, most of these darker grades may eventually be absorbed by industrial users.

The best grades of white table honey are not plentiful at present. Furthermore, the total crop the country over is below what it was in 1946.

If sugar should be included with other foodstuffs exported to Europe in the near future this should tend to strengthen the demand for honey.

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Bear At least two articles have appeared recently, one by a beekeeper in Quebec and the other by a beekeeper in Oregon, concerning bear and the damage they do at times to apiaries.

We are told on supposedly good authority that the only part of the bear's anatomy vulnerable to bee stings is the tip of his nose. That is why Mr. Bear can enter an apiary and do a considerable amount of damage and receive very little bodily injury.

It would seem that something must be done in regions where bear are plentiful to reduce the depredation of this animal upon bee yards.

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Honey the Year Around During the recent sugar shortage when the demand for honey increased rapidly it was difficult if not impossible, to find honey on grocers' shelves all of the year. This meant that some of the people who had been buying honey had to supplement some other sweet and thus

their honey buying habits were abandoned, temporarily at least.

Whether or not those who formed the habit of using honey and were forced to use some other sweet because of the scarcity or lack of honey on the grocers' shelves will now resume their former buying habits remains to be seen.

It may be wishful thinking but we are of the opinion that those who originally enjoyed honey regularly will again return to its use. In any event, there needs to be more honey produced than at present, so that nature's choicest and oldest sweet may take its rightful place among the foods on our table.

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Late Fall Honey for Winter Stores In some of the northeastern states a late fall honey flow from aster helped bees to fill up brood and food chambers for winter. Some commercial beekeepers earlier in the season had visions of feeding large amounts of sugar syrup for winter bee food.

In some instances the aster flow was so heavy during early October that a considerable amount of surplus honey was produced. While this dark honey does not sell so readily as a good grade of white honey, some of it will be moved to industrial users.

The abundance of well ripened honey in brood chambers of hives containing strong colonies this fall should help to insure good wintering and populous colonies next spring.

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Tougher Winters Ahead A newspaper clipping was sent to us recently with the above title. The writer goes on to say that hundreds of polar bears are flocking down from the Arctic Regions into warmer climates inhabited by man. This has been occurring particularly in Sweden. Some weather experts are predicting that a long cycle of mild winters is practically at an end and that the world must now face a new cycle of cold, old-fashioned winters such as our grandfathers talked about.

Just what is going to happen this coming winter in this and other countries in the northern latitudes is not known. We shall know better next spring.

In any event, beekeepers in the North should give their colonies the best possible care, which should help to insure good wintering and strong colonies at the beginning of the coming season.

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High Altitude and Queen Fertility Mr. Claude Saunders of Kent, England, sends us a news item clipped from the London (England) "Evening News" of May 16, 1947, which reads as follows:

"Sydney, Thursday.—Queen bees will take part in flying tests at altitudes of 3000 feet or more in Australia in June in a specially provided aircraft.

"The tests are to determine the effect of high altitude on the queen bees' fertility. Australian experts believe the productive capacity—and therefore the commercial value of a queen bee drops at altitudes of 3000 feet or more."

Mr. Saunders' comment on the item is as follows:

"If this factor of the effect of altitude on the fertility of queen bees is proved to be correct by these Australian experiments, perhaps it will throw new light on the poorer performance of queens in relation to their location when mated. It might even lead to a re-location of some queen rearing yards. And I wonder if any readers have found their best queens come from queen rearing yards in lowland areas, while others that are not so good have been traced to have come from yards in the higher altitudes of 3000 feet above sea level or more. The item leads to many interesting speculations on these and similar lines and the results of the tests should be of value to all who rear queens."

It is possible that some of the queen breeders, also those doing experimental work on the production of queen bees in this country and other countries may have some ideas on the effects of various altitudes on the reproductive capacity of queen bees. If so, Gleanings will be pleased to receive such reports.

* * * * *

Air Drainage for Apiary Sites We have recently been hearing from various sections of the country about the importance of having each apiary located in some spot where the air can flow from or through it easily to some lower level. This, according to consensus on the matter, prevents having an apiary in an air pocket which might result in poor wintering, especially during cold winters. Currents of air are somewhat comparable to water, in that they both flow over the earth's surface and both seek a level.

To get this apiary site problem on a practical basis—if, for example,

a beekeeper is seeking a suitable apiary site, he had better select one on the side of a ravine rather than at the bottom or too near any water that may be flowing at the bottom.

Wind protection for an apiary is considered important. However, in our opinion, the two major requirements, **abundance of stores and populous colonies** of young bees, together with proper air drainage, are the important wintering requirements.

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The Period of Quiescence Some beekeepers write us that they are unable to find any brood in hives during late October and November. Most of such beekeepers are located in the North.

Fortunately for the beekeeper and the bees, there is, during the late fall and early winter months, a month or so when the activity of a colony is at a very low ebb. The bees eat enough food to keep alive and do the minimum amount of work. This is called the period of quiescence.

Colonies that have very young queens may have a few eggs or young brood during November and December in the North. As a rule, however, no brood or eggs are found in the combs during these months.

As a matter of fact, the behavior of the bees in the colonies during this time is much different from what it is during the spring months when brood rearing has already begun. During the late fall bees appear to be listless and act as though they are thoroughly enjoying a rest following the arduous labors of the past season.

In this latitude, queens begin to lay a few eggs during late January or early February. After it once starts, brood rearing will continue and gradually increase as spring approaches. The amount of brood rearing that occurs early in the spring, before bees have access to fresh nectar and pollen, will depend on the amount of pollen there is available in the combs of the brood chamber.

In some parts of the far North, as for example northern Canada, colonies of bees are put in winter repositories during early November and in some cases remain in these dark cellars for almost six months. In such cases the period of quiescence would extend considerably beyond the normal two-month period. However, unless they are provided with good quality stores and suitable wintering conditions, such colonies are likely to be restless as spring approaches.

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How Bees Winter At present, there seems to be some differences of opinion as to how a colony of bees performs while living through the winter months in the North. Those who have made no study of the matter may suppose that bees simply huddle together, remaining practically motionless in order to keep warm during the winter months.

Not until a little after the beginning of this century was serious experimental work done to determine just what a normal colony of bees does during the winter in order to live through a long period of cold weather.

The following by Dr. C. L. Farrar in his circular No. 702 entitled "Productive Management of Honeybee Colonies in the Northern States", should throw some light on this matter. Dr. Farrar is apiculturist of the Division of Bee Culture, Bureau of Entomology and Plant Quarantine, and is head of the Bee Culture Field Station at Madison, Wisconsin, one of the field stations under the supervision of Mr. James I. Hambleton of Beltsville, Maryland:

"The cluster protects itself from external temperatures by forming an insulating shell of bees one to three inches deep to conserve the heat produced by the more active bees in the center of the cluster. It contracts as the air temperature falls, reducing the surface exposed to radiation and increasing the concentration of bees to produce heat energy. A temperature is maintained in the center sufficient to conduct heat to the surface bees so that their temperature will not fall below approximately 45° F., although the temperature in the hive a few inches outside the cluster may fall to zero or below.

"Hive insulation allows the cluster to contract more gradually when there is a sudden drop in the external temperature, and gives it more time to organize its position in relation to the stores, so that fewer bees are left stranded.

"The cluster does not heat the unoccupied space in the hive. During a protracted cold period the temperature of this space will become almost as low in the packed as in the unpacked hive. Too much packing will prevent the colony from responding to warm periods during the day, which would allow the cluster to shift its position on the stores or even allow the bees cleansing flights.

"The cluster itself must protect the colony against low temperatures, and the organization of the colony in relation to its food supply will determine whether or not it winters in good condition."

From North, East, West, and South

SOUTHERN CALIFORNIA, Nov. 3

Weather: Today reminds us of the twins that were named Pete and Repete, one warm, cloudless day after another, much alike. Beekeepers as well as farmers and others look up at the sky hoping for clouds or a sign of rain. Day after day there are occasional fleecy clouds passing overhead. September and October passed as about the driest on record in southern California. Some few sections of the mountainous districts got a few thunder showers but by far the greater part received little or no rain.

Nights are getting quite cool and orange and lemon growers are getting fire pots ready to smudge in case the temperature gets below freezing.

Fortunately we have had very little high wind. If they hold off until after it rains it is always more pleasant as a north wind always carries a lot of dust if the ground is dry when it blows.

Honey Market: While there is no particular demand in the honey market there seems to be a willingness to take honey at around 15 cents. What it would pay if a fellow had 20 tons is a guess.

Miscellaneous: Bees that were moved to the alfalfa and cotton fields of central California have performed quite satisfactorily and bee men are getting ready to move them back to their southern California locations. Although there are some colonies that failed to store surplus because of unforseen circumstances all beemen who moved seem to be satisfied and have their colonies in good shape for wintering. Colonies that weigh 100 pounds two stories high are about right for wintering.

Beekeepers are busy repairing, painting, and getting ready for next season's operations. Some are using aluminum paint and from past experience seem to like it.

We saw 12-ounce sections of comb honey on the market a few days ago marked 51 cents each. Slow selling but there are people who will buy an article that attracts their attention no matter what the price, if they have the money to pay for it. One good thing about the present situation is that there is very little buying of foodstuffs on credit. As prices get lower and money less plentiful as they are sure to, people will adjust themselves to the changes the same as they have with the rising prices.—L. L. Andrews, Corona, Calif.

NORTHERN CALIFORNIA, Nov. 3

Weather: What good a little rain can do at the right time! All of the hills and pastures are green in northern California following some showers this past month. Good news for the cattle and sheep producers and for the beekeepers next year. Here at Davis we had 2.46 inches of rain this past month which is almost an inch above normal for this time of year. The arsenical dusts have been washed off the vegetation and no more will be applied until next summer. Beekeepers generally are hopeful that this is the beginning of a wet fall for this will mean better growth of the native nectar and pollen plants in the spring.

The Honey Crop: The honey crop is now in the can and the results are disappointing. Some beekeepers failed to "wet an extractor" while 30-pound averages are entirely too common. Occasionally one hears of 60 and 90-pound averages for commercial units but the final survey reveals this to be one of the poorest crops in years. The quality of the honey, however, is better than in most years of poor yields.

Most beekeepers attribute the low production to the lack of moisture last winter and last spring and to the over-crowding of available pastures. Thousands of colonies were moved into northern California from the southern counties and even from the North. Those normally

located in the tomato-growing sections had to be moved out and in many cases were re-located in already crowded areas.

Condition of Colonies: A majority of the colonies that were left in the tomato-growing sections of northern California are either dead or are seriously weakened by arsenical poisoning. Most of the weak ones will become "winter losses" before spring rolls around because of the poison still stored in their combs and from the fact that they are now composed mostly of old bees. Letters have been received from beekeepers who have never experienced poisoning before, wondering why their bees died in several frames of brood and surplus honey available. Heavy losses occurred in areas normally safe from poisoning. It is possible that in poor honey years bees will fly farther for their stores and thus may concentrate in areas over which the poisons have drifted.

Most colonies in non - poisoned areas are in fair to good condition, averaging at this date from two to three frames with brood and from 10 to 15 frames of bees.

The Honey Market: Honey sales are beginning to pick up in the local markets, especially where the grocers have secured a fresh lot of honey. Sales are still being held up by partly granulated honey of poor quality standing on the shelves, gathering dust. Some of this honey has been cut in price but not enough to move it ahead of honey of better appearance and quality. Local packers who service their trade are becoming better established than those who depend on brokers or jobbers who will not pick up or recondition their products.

The Christmas season should be a good time for individual beekeepers to push their local sales. A 5-pound tin or jar of honey makes an excellent Christmas present. It is also surprising how much honey can be sold locally in 5-gallon containers at from 20 to 25 cents per pound under present conditions. This is a material saving to the family that likes honey.

All price controls have now been removed from sugar and it will be interesting to see what effect this will have on the retail sugar prices as well as on the sale of honey. If recent trends are repeated, the price of sugar will be materially advanced in the near future.

Miscellaneous: Northern California beekeepers and others who have taken heavy losses from chemical poisoning may secure some relief within the next year or two because of a series of circumstances. Methods of application are being improved and the efficiency of newer chemicals may soon force the arsenicals out of the insect control program. Numerous reports of injury to soils and to crops have been received from growers due to the application of 2,4D in the vicinity of their fields. In fact, injury has been produced at a considerable distance from fields over which 2,4D in dust form was applied by airplane. For years beekeepers have been asking certain growers what they would do if their crops were suddenly, unexpectedly, and sometimes inexplicably, destroyed. It is difficult for many to see the importance of a few hundred colonies of bees being killed by poison but one can readily see the effects of injury when crops are destroyed by the effects of a chemical applied at some distance. The shoe is now on the other foot, and it just doesn't fit. Definite legal curbs with impartial enforcement are now being considered.

California beekeepers will sojourn to Redding for the annual convention of the California State Beekeepers' Association, scheduled for December 9, 10, and 11. An interesting and instructive program is being arranged at which several out-of-state speakers have promised to be present.—J. E. Eckert, Davis, Calif.

TEXAS, November 7

Weather: Abnormally high temperature continued throughout October without any appreciable rainfall except in very local and widely scattered areas. With rainfall deficient for most of the year the drouth is becoming increasingly acute.

Plants and Bees: Seedings of vetch and Hubam clover and other legumes usually made at this time have been delayed, although some growers have made dry seedings in the

hope that rainfall in the near future would result in sufficiently early germination. In the northern half of Texas early seeding of Hubam may be employed. Early spring blooming native annuals, important for nectar and pollen, may be expected to be scarce next spring. The native shrubs are not likely to be seriously affected at present in the prospect for a bloom next year. Reports from a few widely scattered local areas indicate that bees have obtained some nectar from several asters, broomweed, the desert willow **Baccharis neglecta** and kinnikinnik **Rhus virens**, and honeydew from galls of the live oak. For the most part the present dearth of nectar and pollen is more acute than in many years and colonies will go into winter with a short supply of pollen and honey. Bees have been much inclined to robbing and some beekeepers have found it necessary to requeen colonies at sunset to escape robbing.

Market: While movement of honey continues slow there is some indication of an increase in demand. Packers are acquiring larger stocks and prices are less fluctuating. About one third of the crop is still in producers' hands. Retail prices, 1 to 5 lb. glass range from 28c to 35c.

Miscellaneous: U. S. Department of Agriculture, Bureau of Agricultural Economics, reports Texas honey production for 1947 at 13,140,000 pounds, with an increase of 23% over 1946. The increase is due largely to the increase in acreage of sweet clover and other legumes, and also the increases in cotton acreage, a better yield from that source, and less damage to cotton from insect pests. Migration of bees to Texas, especially the Lower Rio Grande Valley, indicates that migration will be fully as great as in 1946, when about 22,000 colonies were moved to that area.

The meeting of the Texas Beekeepers' Association at College Station on November 3 and 4 was perhaps the most successful in all respects ever held. Glenn O. Jones, Atlantic, Iowa, and Ralph W. Barnes of Oakland, Nebraska, were the out-of-state speakers. Newly elected officers are: A. W. Bulay, Dayton, President; N. Ross, Corsicana, Vice-President; and L. A. M. Barnette, Houston, Secretary-Treasurer. The Ladies' Auxiliary elected Mrs. F. E. Jackson of Cameron as President, and Mrs. Stanley Weaver of Navasota as Secretary-Treasurer. The 1948 meeting will be held at College Station.—A. H. Alex, San Antonio, Texas.

IOWA, November 6

Weather: The weather during the entire fall period has been unusually favorable for apiary work. It has been unusually warm and for the most part without precipitation. This has enabled producers to remove their crop satisfactorily in every way. The weather has also favored considerable brood development. This should result in colonies going into the winter with an exceptionally large proportion of their population being young bees. Since the stores were on the colonies late, because of the fall flow, there is reason to believe that ample stores will be available for the colonies for overwintering. Some have already expressed fear that the late broodering would pull heavily on stores. However, the value of young bees has been demonstrated during the last three years when they were not generally available for overwintering. In fact, the weather has been so nice that wrapping the colonies has been delayed and the fear now is that cold weather may come suddenly and of severe proportions. This would make wrapping rather difficult.

Honey Crop: The crop for 1947 turned out to be much better than was anticipated during the summer; however, it is hardly to be considered a normal crop. Some areas were more favored than others; for the state as a whole probably the crop can be estimated at 80 percent of normal. In spite of this, the figures which have been released indicate that Iowa stood at the head of the list in honey produced, holding a very slight margin over Minnesota. The quality of honey was better than had been anticipated, although it is not quite as light as the honey produced normally in Iowa.

Market: The market situation is

somewhat of a puzzle. Honey seems to be moving very slowly at the retail level. The greatest movement has been from producer to consumer. Honey has been placed in cooperative warehouses, but independent producers have received no bids from independent packers. It is rather hard to believe that honey will be the one exception among the articles of food and other items of living which would go down when everything else is going up. Certainly the crop of the United States is not sufficient to begin any sacrifice operations at the present time.

Miscellaneous: The problem of pasturage for 1948 is a matter of considerable concern to Iowa honey producers. The continued demand for increased acreage to be used for corn and soybeans is having an accumulated effect on the disappearance of legumes. The unusual weather conditions which prevailed this year delayed cutting of alfalfa and red clover for hay until they ran into a seed crop. This gave an unexpected source of nectar. Without this unexpected return, the honey crop of Iowa would have been short indeed. The fact that Iowa is a state which can accommodate a heavy shift in its cropping system is placing a severe handicap on the honey producers. States with acreages not so well adapted to intertilled crops will show less change in their type of agriculture with greater stability in honey pasturage.

It is possible that this is a contributing factor to the interest which is being displayed by producers relative to the slogan "Beekeeping for Pollination". Reports gathered from all sections of the state indicate that where bees are used there has been a perceptible increase in the legume seed harvest. A few arrangements have been reported of a split in the increase of seed over a normal average. This seed, which was the share of the beekeeper, gave good returns for the use of the bees. This plan could develop very satisfactorily for both the seed producer and the beekeeper. It would be interesting to think of a change in the outlook of the beekeeper from honey production to pollination services.

Mr. L. D. Weldon of Moorhead, Iowa, suffered the loss of his honey house by fire on October 22. While the reports indicate there was some insurance, yet it probably does not cover more than one third of the total loss. Such incidents as this are a very severe setback in the development of honey producing operations. It is difficult for an individual to absorb such losses.

Dr. Astrid Loken of Oslo University, Norway, was a visitor at the College on November 4. Dr. Loken's interest is in pollination. She is making a tour of the United States, getting such information as may be available to take back to Norway where it may be possible to improve conditions which grow out of pollination by bees.

There is a decided increase in inquiries from folks who express an interest in undertaking the keeping of some bees. The short supply of equipment has made it impossible to lend any encouragement to such inquiries in the past. It is hoped, however, that these people may go forward with their desire, for we have missed the beginners' interest in beekeeping during the last eight years.

The Inspection Service closed its season officially on October 31. An expanded program was possible this year because of increased appropriations which were available following July 1. Cooperation with counties has been most excellent with 39 counties now in the cooperative program of area disease cleanup. A meeting of inspectors was held at Ames on November 12 to discuss problems of the service and outline methods by which improvements can be made in the program.—F. B. Paddock, Ames, Iowa.

SASKATCHEWAN, Nov. 3

Weather: After the favorable start bees got during the spring, our summer weather was disappointing, as dry weather continued during the latter part of June and all during the month of July in our best producing areas. Rain came during early August but this was considered too late to be of much value. However, to our surprise a good fall flow was secured, materially improving our average production.

Crop: The ten-year average production per colony in this province is 100 pounds. This year the average per - colony production of 83.5 pounds was secured, quite a bit below the average but much better than was anticipated during midsummer. At least a third of this honey was secured from a fall flow which we do not get one year in ten. There were 74,570 producing colonies and a total crop of 6,232,143 pounds was produced. Generally speaking, beekeepers are very well satisfied with the production this year, particularly in view of the fact that they were quite pessimistic earlier because of the 40% queen loss by supersedure in packages, and the dry weather during July.

Price: Honey prices are decontrolled this year for the first time since the war and have risen sharply from last season. Some sales resistance has been experienced and it remains to be seen whether or not prices will remain at their present levels or be forced down, as was the case in many states south of the border.—R. M. Pugh, Fort Qu'Appelle, Sask.

VIRGINIA, November 3

Weather: The weather this fall here in Virginia has been ideal for beekeeping as far as I could tell. But for some reason the fall flow has not been as good as expected. We had a heavy frost the first half of October which killed tender plants, but did not seem to hurt aster. It turned warm after that and we are still having springlike weather. Rain is abundant and clover is looking good. Some feeding was necessary in a section where a hail storm passed and killed the late summer honey plants.

Bees: Bees are in much better condition than last year. Most bees inspected this fall had large clusters and were heavy with honey. I look for a much smaller winter loss than usual. There is only one trouble here with these seemingly ideal conditions, and that is queens. Some of the beekeepers have had trouble with queens in packages and those introduced to full colonies superseding or turning out to be drone layers. Several queens I used to make increase were accepted and started laying, and then on my next trip I found the queen gone and the bees failed to raise another. I am trying some queens raised near home this fall to see if they will be any better.

Honey Crop: Taking Virginia as a whole the honey crop is much better than last year. The clover and blue thistle in the northern counties was not quite as good as last year, but the crop around Roanoke, Lynchburg, and Appomattox was much better. Some apiaries made 125-pound averages. Sourwood in Franklin, Henry, and Patrick was the best in several years.

Honey Market: Honey has been moving slowly, but most of the large producers are about half through selling, and with few exceptions prices have been holding up well. A few beekeepers have showed signs of nervousness and have cut prices some. I am selling for the same as last season. With bee supplies advancing and everything else just as high or higher than last year I believe we should hold prices where they are.—Henry W. Weatherford, Vernon Hill, Va.

MASSACHUSETTS, Nov. 3

Weather: September and October were warm and pleasant for both bees and beekeepers but the lack of sufficient rain f a l l during October to stimulate the clovers may have an effect on the crop next year. This is especially true on newly seeded fields. Goldenrod and wild aster were in excellent condition in September, and bees were in excellent strength to harvest the usual crop which generally amounts to from 25 to 50 pounds per colony. The dry weather, or some other reason, caused these plants to fail to secrete nectar, and supers put on strong colonies in late August are empty.

Bees: Colonies are not as strong in bees as we would desire, for the failure of the fall crop did not induce the usual September brood

rearing. Queens are still laying moderately, perhaps because of the warm weather. Generally at this time there is no brood in the hives. Honey stores do not average as heavy as we would like to have at this time. Some equalizing of stores must be made to prepare for winter, or sugar must be fed. The fact that the colonies are not as strong in bees may have some advantages where stores are none too heavy, although we like to have our colonies very strong for wintering. Moderate size colonies usually winter very well and build up fine for the honey flow but the extra strong colony can be divided about May 1 to make two rental colonies for pollination.

Honey Crop: The early spring and summer were ideal for bees and honey plants, and yields of honey were excellent. However, some of this surplus had to be left for the bees because of the failure of the fall crop. Prices are about the same as last year, but demand is not as heavy.

Miscellaneous: Preparing the bees for wintering is now the main work to be done, and the best preparation is to have strong colonies with plenty of good stores above them. In the matter of protection we have found that while wind protection and exposure to the sun have many advantages, bees here in Massachusetts will come through the winter in good condition even when placed on stands in an open field—if they are strong in bees and have plenty of honey.

Bruce Morehouse, page 660, November Gleanings, brings up the matter of facing the hives in the winter. We have bees generally facing South, East, and West, but a number face North. Those facing North do not fly as freely on warm days in the winter and early spring but appear to come through the winter in good condition. We prefer to have the hives face toward the sun, and have an upper flight hole in the food chamber to permit the bees to fly more often.

Honey stores of poor quality (unripened honey or honeydew) or shortage of stores, are the principal causes of severe losses during the winter. While we packed our bees here for many years successfully, we find that it is quite a problem to pack and unpack bees in quantity. During the past seven years we have not packed except a few tar-paper wrap for comparison with colonies in single wall hives. We have used a few sheets of newspaper between the inner and outer covers only. This year we will not pack the hives but will reduce the lower entrance and leave an upper flight hole.— R. E. Newell, Medway, Mass.

NEW JERSEY, November 10

Honey Crop: Some years ago Gleanings carried a column headed "Blasted Hopes". With a few exceptions this covers New Jersey beekeeping this season. Tulip poplar, while a short flow, was quite abundant. Then sumac, which usually produces a considerable part of the honey crop of North Jersey, gave great promise. The plants carried the heaviest bloom in years but the crop was practically nil.

While there was considerable goldenrod bloom the nectar was not there. In years past four-story colonies have been needing more room during the blossoming of this plant.

There was the smallest number of plants of white aster **(Aster cricoides)** in many years, and the blossoms which were present apparently had but little to offer the bees although the weather during its blossoming time was favorable except for heavy morning fogs.

Only two areas in the state report anything like a normal crop of honey. One is the lima bean area where beans are grown for canning, and the other is the Spanish needle area.

Following tulip poplar bloom, since there was practically nothing gathered from clovers in much of the state, colonies became so depleted of stores that queens, except for the very youngest, ceased laying in mid-August. This has resulted not only in small clusters of bees for winter but much too large a proportion of old ones.

Tons of sugar have been fed in an effort to provide winter stores. Even so, unless a near miracle occurs the winter loss promises to be heavy.

The present practice of cutting clovers for silage or hay as soon as it starts to bloom, which is when it

is of greatest feeding value, together with modern machinery which makes it possible to strip a large area in a few hours, nearly eliminates clover as a nectar source. So the present condition of clover plants lends no encouragement unless the present farming practices are changed.

There is a small call for honey but either there is but little available or prospective customers are not attracted.—Elmer G. Carr, Pennington, N. J.

NEW YORK, November 6

Weather: Today is a real fall day, cool and cloudy, with a temperature of 55 degrees and very little wind. Rainfall has been normal over the past week. October was a hot dry month with no rain at all. Great care was emphasized to prevent forest fires. Many wells were dry and water systems were without running water. One trucker did a big business delivering water to farmers in this section with a tank which held 600 gallons at $4 per load from Penn Yan water supply. This has been the ideal weather to pack bees in the winter cases. It is difficult for the men to work at this after the snow falls.

Honey Crop: Because of ideal conditions during September and October the bees gathered a nice crop of goldenrod and wild aster honey. Buckwheat did not yield well in some sections of the state, so that the so-called buckwheat honey had a high content of goldenrod honey. The crop was light in sections where there were no wild flowers. From 50 to 100 lbs. per colony have been reported on dark honey.

Market: Sales on white clover honey to buyers and wholesale dealers run from 17 to 20c per lb. Demand is average. Buyers are not stocking up surplus stock but are filling only present orders. Buckwheat and fall flower honey have been reported to move in large lots at 12 to 15c per lb. Honey as usual is being imported into the U.S.A. by shiploads—all grades from white to amber. That steady import is bound in time to more or less affect the market unless the average beekeeper of this Nation does something constructive to increase the sale of honey in the home.

Miscellaneous: This is the time of the year to check supplies such as frames, hives, sections, and foundation. Order early. It pays. Successful beekeeping does not happen—one must plan months ahead of season. Mr. Byer of Canada made a timely statement in the November issue in regard to high prices. Prices can drop in a very short period of time. The crash of 1929 could be repeated again. It is a good idea to buy only what you need.

Our extracting of fall honey is about over and soon the work will be all over for 1947. It has been a wonderful year, full of experience, joy, and trouble, but still the troubles are more or less stepping stones to a larger understanding of the trade. The famous hymn is so true: "The toils of the road will seem nothing when I come to the end of the way".—Roscoe F. Wixson, Dundee, New York.

SOUTH CAROLINA, October 31

Weather: The weather has been unusually warm for the past two months with occasional showers and the nights cool enough to make wild aster yield. The bees have been working aster heavily for the last two weeks. In some localities the bees have gathered as much as a super of aster honey. In most cases the queens are laying and most hives will go into winter with plenty of young bees.

Honey Market: This has been a very good honey year. The price of honey is still high. Some of the largest beekeepers say that sales are falling off. This is to be expected since sugar and other sweets have come back on the market.

Miscellaneous: I believe the beekeepers have done more requeening in this state than ever before. It looks as though the bees will go into winter with new queens and lots of young bees which should enable us to be in good shape to gather our spring honey flow.

Favorable weather conditions, high prices, and a demand for hon-

ey are doing much to stimulate the beekeepers' enthusiasm.—E. S. Prevost, Clemson, So. Car.

ONTARIO, November 4

Weather: "Fair today and tomorrow. without much change in temperature". This has been the almost daily report from our Toronto Observatory for the past four weeks or more. October broke all records for high temperatures since weather predictions have been recorded for over 100 years past in Toronto.

And yet with all this warm weather, we doubt if a pound of honey came in at all of our apiaries. As we read of honey flows in Ohio and other states in that latitude we surely do realize that locality is a big factor in determining honey flows. In Victoria County in particular, we have an apiary adjacent to a very large swamp in which all kinds of asters and other fall flowers grow in profusion, and we thought that surely some honey would be gathered there to help out for winter stores, but we were disappointed as nothing came in from these flowers, even if bees were noticed working on them.

Of course, this spell of fine weather has made it good for feeding and doing other work that goes along with the job of getting all colonies ready for a long spell ahead when we will not be hearing that familiar refrain "fine and warm without much change in temperature".

Although rainfall was abnormally low for the past six weeks, clover has not suffered much, if any. A drouth of similar length occurring in July or August would have literally dried up everything. While acreage of clover is not large for next year, what we have looks well and, generally speaking, prospects for 1948 appear to be at least normal for the beekeepers of Ontario.

Sugar has just been taken off the ration list here in Canada. Sugar, along with cane molasses, were the last items to be rationed and both are now on the free list in so far as buying is concerned. A ceiling is left on both, with sugar being allowed an advance of one cent per pound over the price of a week ago.

We know of some beekeepers who had a heavy feeding bill who were unable to get as much sugar as they wished. With the fine warm weather prevailing, they will now be able to get all they require.

Wholesale price of sugar will be under present ruling a bit over $9 per hundred. After the first World War we bought an outfit of some 400 colonies along with all equipment, and I remember an invoice for $2000 for 100 bags of sugar that went with the outfit. This is just a vivid reminder of what price control did for us during and since the last war

Re prices, we wonder just what will happen to honey markets now that sugar is available for all who want it. Yesterday, at a chain store in a town near us, we saw dark honey labeled "amber" being sold for 81c for a two-pound carton. While a short crop of honey in Ontario may help to keep prices up, we seriously think that this price is too high.

But price structure is not a problem of beekeepers only, as farmers, poultry raisers, and others are all up in arms right now, owing to the rapid advance in feed grain required for their stock. Eventually it will work out on a stabilized basis no doubt, even if some casualties in the way of business failures result.

It just occurs to me as I write that these notes will appear in the December issue of Gleanings. And that means another Christmas Day will be celebrated. May the day really recall to us all the real significance of the message that accompanied the first celebration of this event: "Peace on earth and good will towards men".—J. L. Byer, Markham, Ontario.

Index to 1947 Gleanings

The general index to the 1947 Gleanings in Bee Culture is ready for distribution. It is printed in leaflet form, and we will be glad to mail a copy on request.

80 YEARS AMONG THE BEES

(Continued from page 727)

the bees with sufficient food to prevent starvation, and on this food the bees would rear brood. He was the first one to attempt to give the bees a balanced ration, but in supplying this candy containing rye meal the amount of natural pollen in the combs probably helped to make up a combination such as Dr. Farrar in later years adopted in the form of patties or little cakes of a dough made up of a mixture of syrup, soybean flour, and natural pollen in the proportion of three parts of soybean flour to one part natural pollen. By turning to the subject of Pollen in ABC & XYZ of Bee Culture and to articles written by Dr. Farrar from time to time, it will be found that the combination gave practically as much food as straight pollen itself. Some say that when we know more about the composition of pollen we will be able to make an artificial substitute that will take the place of pure pollen.

George S. Demuth, author and founder of the practice of wintering bees in two-story hives, had previously shown that he wintered colonies in a single-story with no honey by giving them a large cake of rock candy as just described, placed near the top of the cluster. At the time he brought this out it was the custom to winter bees on seven combs putting in division boards to fill up, not allowing the bees to have the whole ten combs. It was the custom to take away all of the honey in the belief that sugar syrup was cheaper. Mr. Demuth did not know, neither did the rest of us, that honey already in the combs is cheaper than any sugar syrup because there is a big loss from feeding. There is a strain on the bees that reduces their reserve of force and strength to withstand the rigors of winter. So he stood the frames on end, six or seven combs, inside of two hive bodies, and then poured packing around the ends, then put on the ordinary winter cover. He thus was able to utilize the extra hive body as an outside winter hive. He had almost empty combs with a little honey, but a large cake of clear granulated sugar candy with a little flour or rye meal. It was demonstrated that such colonies on account of the small space near the top would cluster near the top in close contact with the supply of food and pollen. It was assumed the bees could winter because of the provisional space for the entrance at the bottom. This is mentioned not because we consider it a practical way of wintering bees today, but it worked quite satisfactorily during that period of time when it was thought the bees could be wintered in a single-story hive, the wintering space being confined to seven combs. The theory was that the less room the bees had to warm the less they would suffer from cold. There was something in that, but the trouble with this idea of putting combs on end did not result in a colony strong enough to produce a crop, and Mr. Demuth abandoned it almost as soon as he advocated it. But we in the Medina apiaries, Mr. Demuth then being in the government service, tried it out quite successfully and found that the combination of honey as shown in the article by A. I. Root on how to make candy almost solved the problem of wintering in a single-story hive surrounded by a hive placed in their regular position on a regular bottom board. The discovery seemed quite important at the time, and it is here introduced to show the value of rock candy for wintering purposes. The amount of natural pollen in these cakes of candy was not enough to more than start the colonies on the road but way below the standards as now considered necessary to produce a crop of honey from a force sufficiently large to maintain their temperature during winter when a smaller cluster would be unable to make even a surplus.

Feeding Dry Sugar to Bees

During the last year or so there has been considerable discussion on the possibility of feeding dry sugar, placing the same on top of the super cover near the bee escape hole. This is perfectly practicable during warm weather when the bees can fly. If they are short of stores they will bring in water and make up their own syrup from the sugar placed on top of the super cover. A. I. Root in the 70's had a good deal to say about the possibilities of using this form of feed. He abandoned it at the time because the sugar would sometimes be ignored by the bees entirely. He

(Continued on page 761)

THE NATIONAL ANNUAL FEDERATION MEETING

(Continued from page 735)

12:15 P.M. Recess for lunch

1:30 P.M. Election of Officers

2:00 P.M. What Sets the Price of Honey?
Harold J. Clay
Production aid Marketing Administration
Washington, D. C.

2:30 P.M. Bees in the Air
H. J. Whitcombe
Package Bee Shipper
Davis, California

3:00 P.M. Research Committe Report
Ralph W. Barnes
Committee Chairman
Oakland, Nebraska

3:15 P.M. Observations on Nosema
Dr. C. E. Burnside
Division of Bee Culture
University of Wyoming
Laramie, Wyoming

3:30 P.M. United Efforts Can Buy Better Bees.
M. S. Fortune, Chr.
Bee Breeders' Com.
Mayhew, Mississippi

4:00 P.M. Is There a Need to Revamp Our Educational Work in Beekeeping?
Jas. I. Hambleton
Division of Bee Culture
Beltsville, Maryland

6:30 P.M. Annual Banquet
M. S. Stone, Toastmaster
Superior Honey Co.
Los Angeles, Calif.
Call to order and introduction of Toastmaster by newly elected President.

10:00 P.M. Executive Committee Meeting
National Beekeepers' Auxiliary Annual Program

January 15
6:30 P.M. Get-acquainted Dinner
Informal

January 16
9:00 A.M. Call to Order
Mrs. Howard Weaver
President
Navasota, Texas

Invocation

Welcome Address
Mrs. Ormus Dutson
Deseret, Utah

Response
Mrs. E. G. Brown, Sr.
Sioux City, Iowa

Roll Call — Collection of dues

Report of Secretary-Treasurer
Mrs. C. R. Corey
Creston, Iowa

Tricks of the Homemaker's Trade
Miss Virginia McNaughton, Home Economist
American Honey Inst.
Madison, Wisconsin

Ways to Create Auxiliary Activities
Discussion Leader
Mrs Ray N. Miller
Salt Lake City, Utah

Reports of Committees and Election of Officers

A TALK TO BEEKEEPERS

(Continued from page 729)

thought he was performing a supernatural trick and had some power or influence over the bees.

" E. R. " Pulled a Fast One

About 15 years ago"E. R." was scheduled for a bee talk and demonstration one evening at the Berea high school. Late in the afternoon he called to inquire if I would take his place as he had another engagement. At first I hesitated a bit as I had never handled bees on a stage under electric lights. However, I agreed to undertake the assignment —with some fear and trembling.

I shall never forget that filled auditorium and a row of boys in the front seats just beyond the footlights. They were all eyes and ears as I removed the bees from the small hive, shook them onto a newspaper, poured them into my hat, and then placed the hat upon my head. Only one boy got stung that evening, but he attempted to pick up a bee on the stage after the meeting was over, and naturally the bee stung him.

At the close of the meeting, after leaving the stage, whom should I see down in the audience but E, R, Root who was grinning from ear to ear. It then began to dawn on me that "E. R." didn't have another engagement, but that he simply wanted to see how I would react to this rather unusual experience which was new to me. Had I known he was in the audience I probably would have dropped the comb covered with bees because of nervousness, and this might have caused a scene.

Another Stunt that "E. R." Pulled

E. R. Root understands the art of showmanship. He used to give a Chautauqua talk in the afternoon as well as evening. During the afternoon talk he usually had a young lady assist him. At the proper time he would remove a comb of bees from the small hive, making sure the queen was left in the hive. After pouring the bees on the newspaper and shaking them up and down a bit, he would throw a handful of bees up into the air out over the heads of the people in the front rows in the tent. He would then hand the young lady a magic wand and would say to the audience, "Now, when the young lady waves the magic wand the bees in the air will begin returning to the hive". Of

Price of Honey

Interest has been great in the price of honey for the past few months. The following figures represent an expression of current prices from beekeepers and honey packers over the country. They are based on several reports from each state averaged with all of the reports in the region. Where insufficient information is returned, prices have been omitted from the chart. Where three figures appear on the chart the first represents the low, the middle figure the average, and the third figure the high.

Monthly Honey Report (Prices expressed in cents per pound)

	Northeast	Southeast	North Central	Midwest	Southwest
Bulk Honey					
Table Grade	18-19-23	20-25	18-23-33	16-20-26	15-17-20
Industrial Grade	15-19		15-18-21	12-14-18	12-14
Price to Grocers					
5 lb. jar or can	25-28-35	22-30	24-27-30	22-24-27	24-25
3 lb. jar			22-31		23-25
2 lb. jar	27-30-35		27-32		27-28
1 lb. jar	28-35-40	30-35	29-31-33	28-33	28-29-32
Comb Honey (24's)	$10.50		$10.00	$8.00 to $10.00	
Retail Price					
60 lb. can	18-24-30	20-25	24-25-29	20-24-30	20-20-25
5 lb. jar or can	25-34-45	30-40	27-34-40	28-31-35	23-27-32
3 lb. jar	32-37-46		25-34-39		29-31-32
2 lb. jar	32-39-48		30-46-41	35-37-40	29-33-35
1 lb. jar	35-42-50	40	39-49-53	35-42-55	33-38-40
Honey Sales	Slow	All Sold to Slow	Fair	Fair to Slow	Slow to Fair
Estimated Crop					
Conditions based on normal (%)	76	78	61	84	84

A TALK TO BEEKEEPERS

(Continued from page 748)

course, "E. R.", as he continued his talk, would watch the behavior of the bees flying around near the top of the tent. As soon as he noticed them beginning to return to the hive on the stage, he would give the young lady a secret sign and she in turn would wave her magic wand which, as far as the audience could see, caused the bees to return to their hive. It was really a clever stunt. If "E. R." had made a mistake and had gotten the queen mixed up with the bees he threw into the air, the result would likely have been much different.

Incidentally, it would be difficult, if not impossible, to estimate or evaluate the great amount of good Mr. Root did during his four years' work with the Chautauquain helping to make people in practically every state in the Union bee and honey minded.

Viewing Apiaries from the Air

It was my pleasure a few weeks ago to accompany my son-in-law, Frank Dushenke, a beekeeper, in a small plane while we flew over some of the Root Company apiaries and one of my own apiaries, which is shown in the picture, page 729.

Somehow, objects on the ground look considerably different from the air than they do when viewed from the ground. Some of the fields look like a checkerboard.

This little yard, about 3½ miles west out of Medina, beside the railroad which can be seen in the foreground is the one that I enjoy visiting, mainly because the scenery around the yard is so picturesque. Sometimes during a hot day in summer when I begin to experience "brain fag" at my desk, I drop everything in order to visit this yard to watch the bees at work and perhaps learn something about bee behavior that is new to me.

In one of my talks about six years ago I mentioned taking my rifle along in the car while I visited this yard on Saturday afternoons. When I got tired working with the bees, I would walk down the railroad track with my rifle to take some shots at woodchucks that lived in a high bank near the railroad.

A short time ago I made a vow that I would not kill any more woodchucks unless they were actually doing some damage. Woodchucks have as much right to live as I have.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate:—12c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Mich.

BEST GRADE HONEY FOR SALE—in large quantities. 25c lb. in your containers. E. R. Raley, Box 1610, Daytona Beach, Fla.

WHITE and amber honey for sale in 660-lb. drums, 60-lb. tins, and in glass jars. Alexander Co., 819 Reynolds, Toledo, Ohio.

FOR SALE—Dark amber extracted in 60's, 20c per lb. Comb, amber to dark, $6 and $8 per case of 24 sections. H. G. Quirin, Bellevue, Ohio.

WHITE CLOVER HONEY in new 60-lb. tins, $15. Sample, 15c. Busy Bee Farm, No. Abington, Mass.

FOR SALE—1000 60's Wisconsin buckwheat and clover honey mixed, good flavor. 1000 60's heartsease, heavy body, color very light. Box 3522 care of Gleanings in Bee Culture, Medina, Ohio.

FOR SALE—100,000 lb. Eby's Wisconsin clover honey, $15.15 F.O.B. W. Elkton, in 60-lb. tins. Also available in 1 to 5-lb. glass. Beekeepers take notice—do not let your trade lapse—this is a fine flavor white honey—the kind of honey you will be proud to supply your customers. Alan Eby, West Elkton, Ohio.

AMBER HONEY from clover, goldenrod, and buckwheat. Lewis Klaty, Carsonville, Mich.

FOR SALE—Amber extracted, mild flavor, new cans, $12.00. N. B. Querin, Bellevue, O.

FOR SALE — Truckload clover honey. Sueper Apiaries, Webster City, Iowa.

FOR SALE—300 cases of clover honey in five pound jars, also a truck load of amber honey. Walter J. Rink, Port Hope, Mich.

WHITE CLOVER honey in sixties, truck or carload, twenty cents pound. Walter Weldon, Moorhead, Iowa.

BEST GRADE honey, white clover, 60 lbs., $14.00; light amber, $13.00. J. G. Burtis, Marietta, N. Y.

25 60-lb. cans buckwheat honey for sale. Noel J. Loucks, Springboro, R. 2, Pa.

LIGHT AMBER HONEY in 60's. Sample, 10c. Joseph Fekel, Vineland, N. J.

FOR SALE—Raspberry Blossom Honey, $14.00 per 60-lb. can; $3.00 per 10-lb. pail; $1.50 per 5-lb. pail, F.O.B. Boyd, Wisconsin. Frank Reith.

SWEET CLOVER HONEY in 60-lb. tins and 5-lb. pails, any quantity. Abram Brubaker, Lancaster, Pa., R. 1.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED—Comb and extracted clover honey. State price in first letter. Honeymoon Products Co., 39 E. Henry St., River Rouge 18, Mich.

WANTED — White and amber honey, any amount. D. F. Treap, 316 Keenan Ave., Cuyahoga Falls, Ohio.

HONEY & BEESWAX — Highest prices paid. Mail samples. Advise quantity. BRYANT AND SAWYER, LOS ANGELES 21, CALIFORNIA.

CASH FOR YOUR HONEY—Extracted or comb. Regular trade, send sample. 60-lb. cans furnished, if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles, Calif.

HONEY WANTED—All grades. Carloads or less. Also beeswax. Pay top prices. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York 7, N. Y.

ALL GRADES of white and amber honey wanted. Carloads or less. Mail sample and price. Alexander Company, 819 Reynolds Rd., Toledo, Ohio.

WANTED—Clover extracted and comb honey. Any quantity. State price in first letter. C. Jankowski, Prairie View, Ills.

WANTED—Clover extracted and comb honey. L. Konces, North Abington, Massachusetts.

WANTED — Light extracted honey in 60's. Clover preferred. J. Jones, 115 W. 82nd. St., New York 24, N. Y.

WANTED—White or light extracted clover honey in sixties. Small quantities considered. Send sample and best price. Krema Products Company, Columbus 8, Ohio.

WANTED—EXTRACTED HONEY—Clover, ton lots. Mail sample and price. R. B. Souder, Souderton, Pa.

FOR SALE

SIMPLEX TRAP clips queen without handling. $1.75 postpaid. INSTANT FRAME spacers seven-eight-nine, fast — accurate, $1.50 postpaid. Free circulars. George Leys, 48 Drake Ave., New Rochelle, N. Y.

QUEENBEE PAINTING OUTFIT, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban, Mass.

WRITE FOR LOW CASH price glass jars and 5-lb. tin pails. Complete stock. Prompt shipment. Roscoe F. Wixson, Dundee, N. Y.

VENTILATING BEEHIVE COVERS, fully adjustable for winter or summer. Write for descriptive folder. George Watkins, Box 373, Austin, Minnesota.

HONEY LABELS — Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples and prices. C. W. AEPPLER COMPANY, OCONOMOWOC, WIS.

Pure Northern maple syrup in 5-gallon or 1-gallon containers at $4.85 a gallon. The Alexander Company, 819 Reynolds Road, Toledo, Ohio.

FOR SALE — 2-lb. round honey jars, packed 12 to carton, with caps, 42c per carton, or $5.00 gross F.O.B. Summerfield, Fla., Route 1, J. W. Reitz & Bros.

WRITE FOR CATALOG — Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Mich.

We carry a complete stock of bee supplies and honey containers. Write for our price list. Prairie View Honey Company, 12303 12th St., Detroit 6, Mich.

FOR SALE—SHALLOW SUPERS, 1000 with drawn combs, $2.00 each. 10-frame size. Good condition. No small lot sales. State permit and health certificate furnished. Howard M. Myers, Ransomville, N. Y.

HOFFMAN FOUNDATION MILL, A-1 condition. Used only once. Mrs. J. C. Hutzelman, Glendale, Ohio.

FOR SALE—60 used 10-fr. hives, 50 deep supers, 30 shallow supers, all clean like new, painted white, frames wired. G. E. Miller, 317-4th St., N. E., Watertown, So. Dak.

G. B. Lewis Wood Goods! Dadant's Famous Crimp wired Foundation. Catalogue on request. Italian Package Bees and Queens, April and May. No Deposit required. Dotson's Apiaries, 3059 W. Roxboro Rd., NE, Atlanta, Georgia.

FOR SALE—Standard 8 and 10-frame bee hives. Number 1's, $1.05 each. Hoffman frames, $8.00 per 100. Four cleat covers, 80c each. Bottom boards, 80c each. K.D. and F.O.B. factory. Write for catalog. Satisfaction guaranteed. HAGEN-LUNCEFORD MFG. & SUPPLY, 2500 NORTH FOURTH STREET, COEUR D'ALENE, IDAHO.

FOR SALE—VOHO Entrance Closures! They save you valuable time, your bees, and your equipment. VOHO Entrance Closures securely screen an entrance in less than three seconds. VOHO Entrance Closures automatically lock into position when placed in the entrances. There are 12 distinct occasions when VOHO Entrance Closures will facilitate your beekeeping operations. VOHO Entrance Closures allow maximum ventilation with the least disturbance to the bees. Write for quantity prices and facts about these amazing new aids to beekeeping. Priced to sell—Upper, $0.80;—Lower, $1.30. Satisfaction guaranteed. VOHO PRODUCTS, 2916 Orange St., Norfolk 2, Va.

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Carloads and less than carloads. Mail sample and best prices in all grades.

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Oconomowoc, Wisconsin

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Italians - Causasians and Daughters of Queens
Bred for Resistance
Over 30 Years a Shipper
Send for FREE Circulars

BLUE BONNET APIARIES

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IT'S A GOOD IDEA

This time of year to gather up all your old comb and cappings and have them rendered into beeswax before the wax moths consume any part of it. We charge only 2c lb. for rendering when your old comb or cappings weigh 100 lbs. or more (net), 3c on smaller shipments. We are buying clean beeswax today at 43c lb. delivered.

We are always buying honey. Send SAMPLE, state how much you have, and quote your best price. We remit promptly for honey and wax shipments.

Send for our Money Saving Price List on bee supplies.

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Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

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Michigan's Most Complete Stock Honey Containers for Extracted, Section, and Cut Comb Honey

Write for price lists and discount rates

Paying Top Prices for HONEY and Beeswax

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ITALIANS

Bees and Queens for 1948

Dark three-banded strain that are good producers.

2 lb. Pkg. with queen	$3.95
3 lb. Pkg. with queen	4.95
Extra Queens	1.15

$1.00 deposit required on each package booked.

A. M. PEACH

Baldwyn, Miss.

CARNIOLANS

CAUCASIANS

A very Merry Christmas and a Prosperous 1948 to you.

Establishing a branch queen yard in southern Florida for early queens and some packages. See next adv.

Albert G. Hann

Glen Gardner, N. J.

LEATHER COLORED ITALIAN BEES & QUEENS

Packages with or without queens. All packages are screened. No drones. All queens are laying before they are shipped. We guarantee satisfaction and quick delivery. Located on L & N main line.

M. I. TINDAL & Son

806 Cedar St., Greenville, Ala.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements, but we cannot be held responsible in case disease appears among bees sold or dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

THREE-BANDED ITALIAN queens, untested, $1.10 each up to 25; over 25, $1.00 each. Alamance Bee Company, Graham, N. C.

GOOD ITALIAN QUEENS, $1.00 each. D. W. HOWELL, Shellman, Georgia.

BOOKING ORDERS for package bees and queens for '48 shipment. Walter D. Leverette, P. O. Box 364, Fort Pierce, Fla.

PACKAGE BEES AND QUEENS. Three band Italians. 26 years' experience. Circular free. Crenshaw County Apiaries, Rutledge, Ala.

BOOKING PACKAGE BEES with Caucasian Queen for spring delivery. Write Miller & Evans, Three Rivers, Texas, Route 1.

CAUCASIAN QUEENS to fill your hives with gentle high producing bees. Howard Crom, Ripon, Calif.

ITALIAN QUEENS—$1.10, any number. Satisfaction assured. Shipped by airmail for better service. Lange Apiaries, Llano, Texas.

BREWER'S LINE - BRED CAUCASIAN QUEENS—We have closed our queen yards for 1947. Now booking orders for April delivery. 30c deposit on each queen at time of booking. No package bees. Brewer Brothers Apiaries, 3616 Caucasian Circle, Tampa 6, Florida.

THREE - BANDED ITALIAN bees and queens for 1948 delivery with apiary inspection certificate. Post a card for General Information and Price Circular. Cottage Hill Apiaries, Rt. 2, Mobile, Ala.

CAUCASIAN QUEENS and Package Bees. Booking orders for 1948. 2-lb. packages, $5.00; 3-lb. packages, $6.00; queens, untested, $1.50. Lewis & Tillery Bee Co., Rt. 1, Box 280, Greenville, Ala.

FOR SALE—Complete modern honey house, equipment only. 300 colonies. State inspection. Cash or ⅓ down on easy terms. Alvin Roop, Jr.,, Spruce, Michigan.

FOR SALE—105 colonies of bees in new Jumbo hives, shallow super included, $15. Inspected. William Kuhnen, Rt. 3, Box 62, Orland, California.

FOR SALE—800 colonies bees, with complete equipment for operating them. Located in southeastern North Carolina. Good locations for honey production or ideal for dividing early in spring and moving north or west for clover honey flow. Disease free. Box 2410, Gleanings, Medina, Ohio.

FOR SALE—25 acres, mostly wooded, 10 miles west of Port Huron, on pavement, new house, 20 x 24, unfinished, full basement, 1000 5-year-old pines; young apples, plums, peach, and cherry orchard. 60 2-story hives of bees, extractor, settling tank. Inspection certificate furnished. A good supply of 60-lb. cans and 5-lb. jars. Live stream, raspberries, strawberries, and blowerberries. $4200—$2000 down. Write owner, R. H. Ploeger, 4824 Curtis Avenue, Dearborn, Michigan.

HELP WANTED

WANTED — Year around or seasonal beekeeper's helper, capable, willing, young married man preferred. State qualifications, wages expected. Roger C. Lane, Trumansburg, N. Y.

WANTED — Experienced queen yard man. Year around employment in yards and shop. We can furnish a good modern home to live in. Give full information, age, experience, and salary expected in first letter. H. C. Short, Fitzpatrick, Ala.

EXPERIENCED and inexperienced help needed in package bee production for the 1948 season. Also queen breeder. Year around job for right parties. F. E. Morrison, Rt. 2, Box 103, Auburn, Calif.

SEEDS

NECTAR AND POLLEN YIELDING TREES, SHRUBS, and PLANTS for your section. Write for our descriptive illustrated Folder and order items wanted before being sold. Shipping all winter. NICOLLETT COUNTY NURSERY, St. Peter, Minn.

SEEDS OF HONEY PLANTS—New circular just printed describing 45 good honey plants. Get your copy now and order early while seed stocks are complete. Special: one packet each of 12 good honey plants for $2.00 postpaid. Pellett Gardens, Atlantic, Iowa.

MOTHERWORT SEED, one of the finest honey plants, $1.75 per ounce, postpaid. Henry Deeatrick, Sumner, Wash.

PURPLE LOOSESTRIFE, good honey plant, grows wild in wet land. Seed, per packet, 20c; ounce, $1.00; ¼ pound, $3.00; pound, $9.00, postpaid. Pellett Gardens, Atlantic, Iowa.

SEND FOR PARTICULARS concerning the new Pellett Clover which spreads rapidly by underground root system. Root divisions can be planted now in the South. Pellett Gardens, Atlantic, Iowa.

HARDY ALFALFA, U. S. GROWN, $15 per bushel; Hardy Grimm $19.20; Scarified Sweet Clover $9.15; New Timothy $3.20; Timothy and Alsike Mixed $6.45; New Strain Brome $3.45; Hybrid Seed Corn, tested, $4.75. Prices low on Red Clover, Lespedeza, Alsike; Clinton, Mindo and Benton Oats, etc. Our seeds recleaned, tested. Guaranteed satisfactory and sold subject your 60-day test. Write for Free Samples and 1948 catalog. Hurry, scarcities exist. AMERICAN FIELD SEED CO., Dept. 382, Chicago 9, Illinois.

NEW CROP SWEET CLOVER, scarified $8.90; unhulled $4.50; Red Clover, contains some other crop seeds, $23.50; Hardy Alfalfa $14.70; Grimm Alfalfa $18.90; New Timothy $3.10; Alsike and Timothy $6.30; New Strain Brome $3.40. All per bushel, triple recleaned. Low prices on Red Clover, Alsike, Lespedeza, and others. Hybrid Corn $4.75. Guaranteed satisfactory. Free samples—catalog. CHARLES SINN, Box 482, Clarinda, Iowa.

SUPPLIES

ATTENTION BEEKEEPERS IN MINNESOTA and adjacent states. We offer a real service on Lewis-Dadant Bee Supplies, honey containers, and labels at a price saving to you. Top market price paid for extracted honey and beeswax. HONEY SALES COMPANY, 1806-08 NORTH WASHINGTON AVE., MINNEAPOLIS 11, MINN.

Now closing the season of 1947, we look forward to another, and are doing all we can on our part to merit your continued patronage in 1948. Season opens May 20th.

WHITE PINE BEE FARMS
(The Home of Northern-bred Italian Queens)
Rockton, Pa.

BOOKING ORDERS
for 1948 season
B. J. Bordelon Apiaries
Moreauville, La.

Now booking orders for 1948
Leather Colored Ialian Queens and Package Bees
Write for Prices
LYNN WILLIAMS
Rt. 3 Oroville, Calif.

ITALIAN BEES AND QUEENS
We are booking orders for Spring, 1948. Only 20% with order, balance ten (10) days before shipping date. Prices as follows

2-lb. package with queens,	$4.00
3-lb. package with queens,	5.00
4-lb. package with queens,	6.00

THE STAR BEE FARM
Hessmer, La.

Queens of the Golden West
Buy Western-bred queens and package bees for best results. We are now booking orders for spring 1948.
CLIFTON APIARIES
Oroville, Box 684, California

Hall Apiaries
Italian Bees & Queens

	1-24	25-99	100-up
2 lb. Pkg.	$4.50	$4.25	$4.00
3 lb. Pkgs.	5.85	5.55	5.25
Queens	1.40	1.30	1.20

Booking orders for 1948.
Live delivery guaranteed.
We try to please.
P.O. Box 415, Prichard, Ala.

Season's Greetings

Our sincere thanks for every order received this year and also for the nice letters about our bees and service.
Our 1948 booking is well advanced.

W. E. Plant
Hattiesburg, Rt. 2 Mississippi

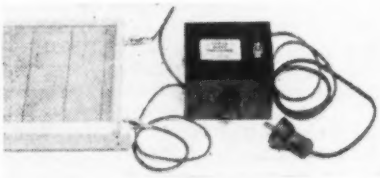
Italian Queens and Package Bees

We are now booking orders for 1948 delivery, only 20% with order, balance 10 days before shipping date. We guarantee live delivery and health certificate with each shipment.

Prices as follows:

2 lb. pkg. with queen	$4.00
3 lb. pkg. with queen	5.00
4 lb. pkg. with queen	6.00

Clover Bee Farms
HESSMER, LA.



SUPER WIRE IMBEDDER
Finger-tip heat control
Price, $11.50 Wt. 3½ lbs.
Order Early for Spring Delivery
R. P. Easton
1227 Cornell Ave., Hillcrest,
Binghamton, New York.

Modern Beekeeping

The picture magazine of beekeeping. We show you with pictures how to do the job easier, quicker, and better. Special inventor's page.
One year, $1.00. Free sample copy.
Modern Beekeeping
Paducah, Kentucky.

WANTED TO BUY

Bees and equipment. Charles Bangham, Lancaster, Ohio.

TURKEYS

RAISE TURKEYS THE NEW WAY. Write for free information explaining how to make up to $3000 in your own back yard. Address: NATIONAL TURKEY INSTITUTE, Dept. 253, Columbus, Kansas.

MAGAZINES

THE BEE WORLD—The leading journal of Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including a subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

WESTERN CANADA BEEKEEPER—official organ of the Manitoba Beekeepers' Association. One year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $2.25. Wallingford Building, Winnipeg, Canada.

MAGAZINES AND BOOKS CATALOG, fourteen classifications, for stamp. Van Hoesen Agency, 43 Maple, Franklinville, New York.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy against 25 cents (or 1s 6d.) postage stamp. Yearly, 7s, 6d, ($1.50) International Money Order. Apply Bhupen Apiaries, (Himalayas) Ramgarrh, Dist Naini Tal, U. P. India.

Read the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, E. E. A. Leach, Box 57, East Rand P. O. Transvaal, South Africa.

ANGORA GOATS

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Texas, the only ranch magazine published serving the Angora Goat industry. Subscription—$1.50, Sample copy—fifteen cents.

THE JOHN M. DAVIS STRAIN
ITALIAN QUEENS
BRED THE DAVIS WAY
Guaranteed to please

Untested	$1.25 each
Tested	2.00 each
After June 30th,	1.00 each

Untested only
Cash with order
Little's Apiaries
P. O. Box 122
Shelbyville, Tennessee
Where Quality Reigns

Protect your future. Buy your extra Savings Bonds Now.

FROM THE APIARY NOTEBOOK

(Continued from page 707)

land is not too sloping. It requires a great amount of winter rain to enable steep slope plants to yield surplus honey. Much of the level land where the yield is best has been taken over by the plow.

* * * * *

A few years ago thousands of colonies of bees burned up in range fires in Los Angeles County. This summer around the first part of July, two great fires in southern California destroyed 60 homes and many colonies of bees and equipment. From now on until the winter rains come, the ranges are like a tinder box. I have given a high priority to the work of cleaning up the grass and brush in my outyards in the mountains.

Elsinore, Calif.

EPHARDT HONEY FARMS
Plaucheville, Louisiana.

CARNIOLAN QUEENS
Booking orders for 1948

ITALIAN
Package Bees and Queens for 1948

	1-29	30-98	99-up
2 lbs. with queen	$4.30	$4.15	$4.00
3 lbs. with queen	5.30	5.15	5.00
Extra Queens	1.35	1.30	1.25

Package prices are F.O.B. Tifton, Ga. Queens postpaid

$1.00 deposit per package when the order is booked, the remainder is due 10 days prior to shipping. Cancellations are in order at any time prior to shipping and deposits promptly returned.

PECANS in the shell

For the holiday season we are offering highest quality, selected large Georgia Pecans for your own use or we will ship to others for you as presents.

Prices are as follows shipped anywhere in the U. S. post PAID. No C.O.D's.

5 lbs. net $2.75
10 lbs. net 5.50
(Slightly higher in Canada.)

Girardeau Apiaries
TIFTON, GEORGIA

TANQUARY'S
Italian Bees and Queens for 1948

TANQUARY'S Bees and Queens for good crops
Heavy Honey production requires strong, hardy
BEES AND QUEENS

Price List for 1948

	1 to 5	6 to 49	50 to 99	100-up
2 lb. packages bees with queens	$4.50	$4.35	$4.20	$4.00
3 lb. packages bees with queens	5.65	5.50	5.25	5.00
4 lb. packages bees with queens	6.75	6.50	6.25	6.00
5 lb. packages bees with queens	7.75	7.50	7.25	7.00
Queens (Postpaid)	1.35	1.30	1.25	1.20

Tested Queens, any number (Postpaid) $2.00
Queenless packages, deduct price of queen.
Queens clipped at no extra cost.

Our shipping dates are filling up fast. Order early, send $1.00 per package deposit, balance ten days before shipment is made. Health certificate furnished with each shipment. Tanquary's Bees and Queens will do the job for you. BEE WISE, ORDER EARLY.

Tanquary Honey Farms, Inc., Lena, S. C.

Garon's Package Bees 1948

Two Strains
THREE-BANDED ITALIAN STOCK
and
Daughters of TESTED RESISTANT BREEDERS Mated with DRONES of TESTED RESISTANT MOTHERS.
Watch this space in the next issue for 1948 prices.
THANKS for the fine support given us during the past year.
The Season's Greetings to All.

Garon Bee Co., Donaldsonville, La.

Package Bees

. . . from hardy, heavy producing stock that has been selected in the North for qualities that producers insist on. Others may have bees lighter in color, possibly more gentle, but primarily our stock is bred to produce.

Oranges and Grapefruit

Sweet tree ripened fruit as it comes from the trees without any artificial coloring or ripening process.

Prices Express Paid in U. S. Only: PER BUSHEL—ORANGES, $5.00; GRAPEFRUIT, $4.00; MIXED BOX, $4.50. ORANGE BLOSSOM HONEY IN SEASON.

Prices, March 15 to May 15: 3 lbs. bees and queen for $5.00 in lots of ten or less. Larger orders take substantial discount. Many shipping dates still open. When ordering state how you want bees to be shipped, and where if different from your post office address.

Blossom Land Fruit & Honey Co., Orlando, FIorida.

Our National Federation

It is serving beekeepers throughout the U. S. A. through the following committees:

(1) Honey and Pollen Plants Committee.
(2) Agricultural Relations Committee.
(3) Honey Grades Committee.
(4) Bee Breeders' Committee.
(5) Standardization of 5-gallon Can Caps Committee.
(6) Research Committee.

Help yourself by giving moral and financial support to our National Federation.

Send contributions to:
Sec.-Treas. Glenn O. Jones, Atlantic. Iowa.

Above photo shows a part of one of our queen yards containing over 10,000 nuclei

1948 Italian Bees and Young Queens 1948

PRICES—WITH QUANTITY DISCOUNTS

	1 to 9	10 to 49	50 to 99	100 and up
2 lb. pkg. with queen (each)	$4.50	$4.25	$4.15	$4.00
3 lb. pkg. with queen (each)	5.65	5.40	5.30	5.15
4 lb. pkg. with queen (each)	6.80	6.55	6.45	6.30
Queens (each) $1.35		Tested $2.00		

We Solicit Large Orders

Overbey Apiaries, Bunkie, La.

What About Beeswax Today?

(Continued from page 709)

number is therefore immediately affected.

To make a saponification test, take 1 pound of water, 1 ounce caustic soda, 2 ounces of wax. Boil one minute with violent agitation after the wax is melted. Cool. Drain off liquid. Refill container with water to about the same level as before and boil for one minute with violent agitation. Cool. If any mineral wax is present it will rise to the surface and harden on cooling. If the wax contains no mineral wax the whole mass will remain as a soapy mixture.

By a little practice one can add mineral wax to beeswax and then separate it again by this test, with surprising accuracy. Of course, the beeswax left has become soap—a very good soap too, by the way, although too expensive for commercial production.

The future of beeswax for cosmetics, polishes, and many other industrial uses is bright, but its quality should be jealously guarded.

1948 Package Bees with Queens

Italians

Prices:

3 lb. pkg. with queen,	$5.65
2 lb. pkg. with queen,	4.50
Extra queen	1.35

By Express

We Serve to Serve Again

Sunny South Apiaries

I. Clark, Prop.

Marksville, La.

Edward C. Hanson Robert L. Hanson

HANSON, HALL BEE COMPANY

Producers and Shippers of
THOROUGHBRED ITALIAN BEES AND QUEENS
Livingston, Alabama

Our prices for 1948 will be the same as those prevailing in 1947 and are quoted below:

	2 lb.	3 lb.	Queens
1-24	$4.50	$5.85	$1.40
25-99	4.25	5.55	1.30
100-up	4.00	5.25	1.20

We are small enough to appreciate your order for a single package and large enough to accept your order for a thousand.

Leather Italian Bees and Queens

We are booking orders for 1948 prices to be quoted later, subject to your approval. No deposit required. Every queen and package guaranteed.

The Rich Honey Farms, Jeanerette, La.

A Friendly Place to Do Business –

1948 price lists will be in the January issue. When you are ready to order in the meantime, we will be glad to have you write us.

The Daniels Apiaries, Picayune, Miss.

MERRY CHRISTMAS TO ALL

Peace and Prosperity throughout the New Year

1948 Prices in January Issue

George A. Hummer & Sons

Prairie Point, Mississippi

1948

Babcock's Four Frame Nuclei

Now booking orders for April and May shipment.

We offer several thousand four frame nuclei, each containing four combs filled with brood, pollen, and honey; a young laying Italian queen, and two lbs. of young worker bees.

We have shipped these nuclei into every part of the country and our customers report they build up quicker, store more honey, and require less attention than any other package.

These nuclei are sold only in lots of two or multiples of two, and are shipped two nuclei in a single ten frame hive body, partitioned in the middle and screened top and bottom.

One third down books order and choice of shipping dates, balance due ten days before shipment. Orders may be cancelled any time before shipping date, with refund in full. Certificate of inspection and live delivery guaranteed.

Price: two, four six, or ten nuclei ..... $7.50 each
over ten nuclei ..... 7.20 each

Red Cypress Wooden Equipment

METAL COVERS, telescoping on all four sides, complete with nails and pure aluminum covering, 5 for .. **$6.75**

BOTTOM BOARDS, standard reversible type, 5 for **4.90**

HIVE BODIES, empty, complete with frame rests and hand holds on four sides, 5 for **6.25**

STANDARD TEN FRAME HIVES, complete with telescoping metal covers, hive bodies, bottom boards, and divided bottom bar frames. No inner covers 5 for .. **23.00**

All equipment is furnished in ten frame size and is completely dovetailed.

BABCOCK HONEY COMPANY

803 Sumter Street Columbia, S. C.

Be Thrifty, Be Wise

Keep in mind a shipper of PACKAGE BEES who can and will make deliveries in 1948. That is our only business.

Our prospects are better at this date than in several years.

If you care to place an order now, we will book, subject to your approval of prices when established, without deposit. You have the right at all times to cancel and any deposit will be refunded. If we accept an order we guarantee to deliver.

We will use only new cages, supply health certificate with each shipment, and ship full weight packages with young queens.

Please do not ask us to take your used cages even as a gift. (See state regulations in bee journals.)

Rossman & Long
P. O. Box 133 Moultrie, Ga.

PACKAGE BEES AND QUEENS

Leather Colored Italians
Bred for Production

Prices of Package Bees and Queens:

Lots of:	2 lb.	3 lb.	Ex. Queen
1 to 24	$4.00	$5.00	$1.25
25 to 99	3.85	4.80	1.10
100 or more	3.75	4.70	1.10

Terms 25% deposit to book order, balance ten days before shipping date. We replace any bees that die in transit if it's our fault. If it is the carriers' fault, file claim with them. We start shipping February 1. Old customers will be given preference.

The Island Apiary

Collier City, Fla.

10,000 Eby's Package Bees

3-lb.—$5.00 each, any number. Booking orders now for early delivery. 10% with order, balance before delivery.

Good honey producing strain Italians.

Highland Apiaries
Sylvester, Georgia.

Announcement

Many of our customers are disapproving our idea of discontinuance of the package bee business. Therefore if you have previously ordered package bees from us send in your requirements for package bees to us and we will see what we can do for you.

We will be happy to hear from anyone who is in need of good Leather Colored Italian Queens.

O. K. Anderson & Son Apiaries
Coffee Springs Box 193 Ala.

JUST NEWS

(Continued from page 733)

for the winning entries will be made at a dinner to be held at Nystom's on Highway No. 4 on the evening of December 8. Tickets at $2.50 per person must be reserved in advance.—Richard A. Geoghegan, Sec.

* * * * *

The Florida State Beekeepers' Association meeting in Orlando, October 13 and 14, was well attended and a great success. R. E. Foster, was made an honorary life member in appreciation of his 27 years of work as State Apiarist. Officers elected for the coming year are: Paul Cutts of Chipley as President; P. M. Packard of Oviedo, Vice-president, and F. S. Houston, Tampa 6, Florida as Secretary-treasurer.

* * * * *

The Ontario Beekeepers' Association meeting held in Toronto November 10 to 12 was a success. Speakers from all but two provinces participated. Lack of space and time forbids a detailed report.

WINTER LOSS FROM COLONIES AND RELATED FACTORS

(Continued from page 718)

colonies compare very favorably with each other in the second year of production in every factor considered except in mortality rate, where the increase group rate is considerably higher than the package-started colonies. This variation, however, might level itself out when operated on a commercial rather than an experimental basis.

6. More experimental work should be done with nuclei, particularly with different age groups of bees, to determine whether double or triple the number of colonies could not be established, wintered-over, and operated for honey production at considerably less expense than purchasing package bees.

80 YEARS AMONG THE BEES

(Continued from page 747)

found, and we too found, that this sugar would not attract the bees as long as there was plenty of honey in the hives, or they were getting nectar from the fields. The purpose of dry sugar is to prevent starvation. There comes a time just before the main honey flow when the bees have exhausted their stores in brood rearing and a strong colony may starve to death unless it has this dry sugar which can be given them so easily.

TOO LATE TO CLASSIFY

WANTED — Fall aster honey, any amount. Send samples and price. Robt. Lane, Greenville, Tenn.

CLOVER extracted honey 60 lb. cans, $15.00 per can F.O.B. Medina, Ohio. Irvin VanDevier,

Southern Beekeeper
(Magazine)
HAPEVILLE, GA.
"Southern in scope—
National in influence"

SPECIAL PRICE
Slightly Imperfect Copies of ABC & XYZ of BEE CULTURE
Priced at only $3.00 each while the limited stock is available. Cash with order. Your money refunded promptly if not satisfied
THE A. I. ROOT COMPANY
Medina, Ohio.

Another Season

Just around the corner. How fast they follow each other. Used to be folks took time out to enjoy the Yuletide, going from home to home making Merry with music, song, and dancing. Christmas seems to have lost its real significance. Let's work and Pray to the end that mankind may again find joy and peace in a world twice drenched in blood in our generation.

* * * * *

To all our host of customers we want again to say "Thank You" for all your considerations. And to all beekeepers everywhere **A Merry Christmas and Happy New Year.**

Jensen's Apiaries

Macon, Mississippi

The business QUALITY built.

QUEENS

Lots of Nice Young Queens for Immediate Shipment Both Italians & Caucasians

We have about finished package shipments for this season, and are devoting our entire time to the production of good queens. If you need them for queenless colonies, requeening, or making increase, we can supply your needs promptly at the following prices:

1-24	$1.10 ea.
25-99	1.00 ea.
100-up	.90 ea.

Clipped or Airmailed at no extra cost.

The Stover Apiaries

Mayhew, Miss.

PACKAGE BEES FOR 1948

File Orders Early for Spring Shipments
Now Booking Orders for Earliest Shipping Dates

All orders for more than two packages SHOULD BE FOR MULTIPLES OF THREE, to make even crates.
All orders should be accompanied by payment of $1.00 PER PACKAGE to confirm and hold shipping date, balance payable before shipping.

PRICES, Quantity Scale:	1 to 9	12 to 48	51 to 99	102-up
2-lb. Pkg. with queen	ea. $4.50	ea. $4.25	ea. $4.15	ea. $4.00
3-lb. Pkg. with queen	ea. 5.65	ea. 5.40	ea. 5.30	ea. 5.15
4-lb. Pkg. with queen	ea. 6.80	ea. 6.55	ea. 6.45	ea. 6.30

Extra Queens, Untested, $1.25, any quantity,
—Tested, $2.00, any quantity.
For queenless packages, deduct $1.25. Loose queen type (late shipment only) add $1.00.

All deposits will be refunded if order is cancelled for any reason.
Above prices will hold unless cost of sugar is materially increased.

The Puett Company Hahira, Ga.

SEASON'S GREETINGS from GEORGE E. SMITH

Route 2

Yuba City, California

Producer of

Northern California

Package Bees and Queens

Season's Greetings from the Iowa Beekeepers' Association

A Service Organization

One of whose projects is to make available a superior strain of DR stock. Write this association for information and prices.

Iowa Beekeepers' Assn.
State House
Des Moines, Iowa

YORK'S PACKAGE BEES AND QUEENS
QUALITY BRED ITALIANS FOR 1948

The Strain That Honey Producers Prefer

Orders are coming in rapidly for the coming season and it is beginning to look like a heavy demand is ahead. We urge you to place your orders now, no deposit necessary until prices are announced later for 1948. We are now preparing to make the coming season one of the greatest and will be fully prepared to serve you with highest quality and best of service. Only neat new cages used and a larger supply of bees and queens than ever will enable us to handle more orders better.

Book your order now, do not delay

York Bee Company, Jesup, Ga., U. S. A.

(The Universal Apiaries)

PACKAGE BEES .... ITALIANS .... QUEENS

April dates are now practically all taken. Rush your order for May booking before it is too late. Prices to be announced later. Queens shipped to all parts of the world. We solicit foreign correspondence.

Bessonet Bee Company, Donaldsonville, La.

BETTER BRED QUEENS THREE BAND ITALIANS

We thank our many customers for their patronage this season. We are now booking orders for 1948.

CALVERT APIARIES — Calvert, Alabama

QUEENS Fall Queens a Specialty QUEENS

You send the order; I have the queens

LEATHER COLORED ITALIAN QUEENS
MIDDLE TENNESSEE APIARIES

1 to 25, $1.35; 26 and up, $1.20—From Imported Strains.
¼ books orders. Balance before shipping. All queens clipped and by air mail at no extra cost. (All Queens after June 15, $1.00)

J. B. TATE & SON
1029 No. 4th St., Nashville 7, Tennessee Tel. No. 34509M

DOVETAILING MACHINE

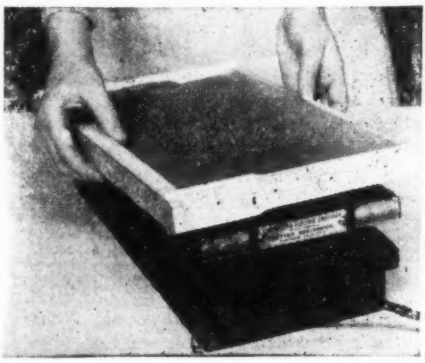
Now a size for every beekeeper's shop. A valuable machine for making your own hives and supers and for repairing your old ones. No reason to ever be short of hives and supers with one of these machines in your own shop. Does a perfect job of dovetailing. Requires only small motor to operate. Make those slack winter months pay dividends by making your own equipment. Easy to operate and priced within reach of all beekeepers.

Write for details

Carl E. Johnson Co.

1557 Gregory Avenue
Lincoln Park 25, Michigan

CARPENTER'S
ELECTRIC EMBEDDER
U. S. Pat. No. 2383708



"BETTER BEE-HAVIOR"
A simple, speedy, and accurate device, operating on 110 volts A. C., which embeds and centers four wires in one operation. Proper gauges prevent hot wires from cutting through foundation.
Price—$8.25, postage prepaid. Shp. wt. 5½ lbs. For immediate delivery. Write for information on other models. Territory open for dealers.

B & C SALES CO.
Box 368 Riverside 3, Calif.

Look for this Sign
When You Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.
KELLEY — "The Bee Man"

PRICES CUT ON TIN AND GLASS

1 lb. honey jars, ctn. 24	70c ea.
2 lb. honey jars, ctn. 12	45c ea.
5 lb. honey jars, ctn. 6	
24 cartons	$10.25
Ctn. 50 5 lb. tin pails	$3.75
Ctn. 50 10 lb. tin pails	5.50

Shipment from our Paducah stock same day order is received. No limit—carloads in stock. 5% discount on $50.00 and 10% on $100.00 orders.

The Walter T. Kelley Co., Paducah, Ky.

Pat. Applied For.

"A Honey of a Money Maker"

Introducing —
The Diamond Line Spinner

First in the line of stainless steel honey and beeswax equipment to be engineered and assembled.

THE Uncappings Drier Par Excellence!

SAVES SPACE
SAVES LABOR
SAVES MONEY
SAVES TIME

Write for Descriptive Leaflet

Mfg. for and Dist. by
The Diamond Match Co.
1300 Produce Street
Los Angeles 21, California

SCIENTIFIC BEEKEEPING
New REVOLUTIONARY METHOD
Send for Valuable Free Bulletin
THE BEEMASTER
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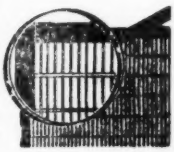

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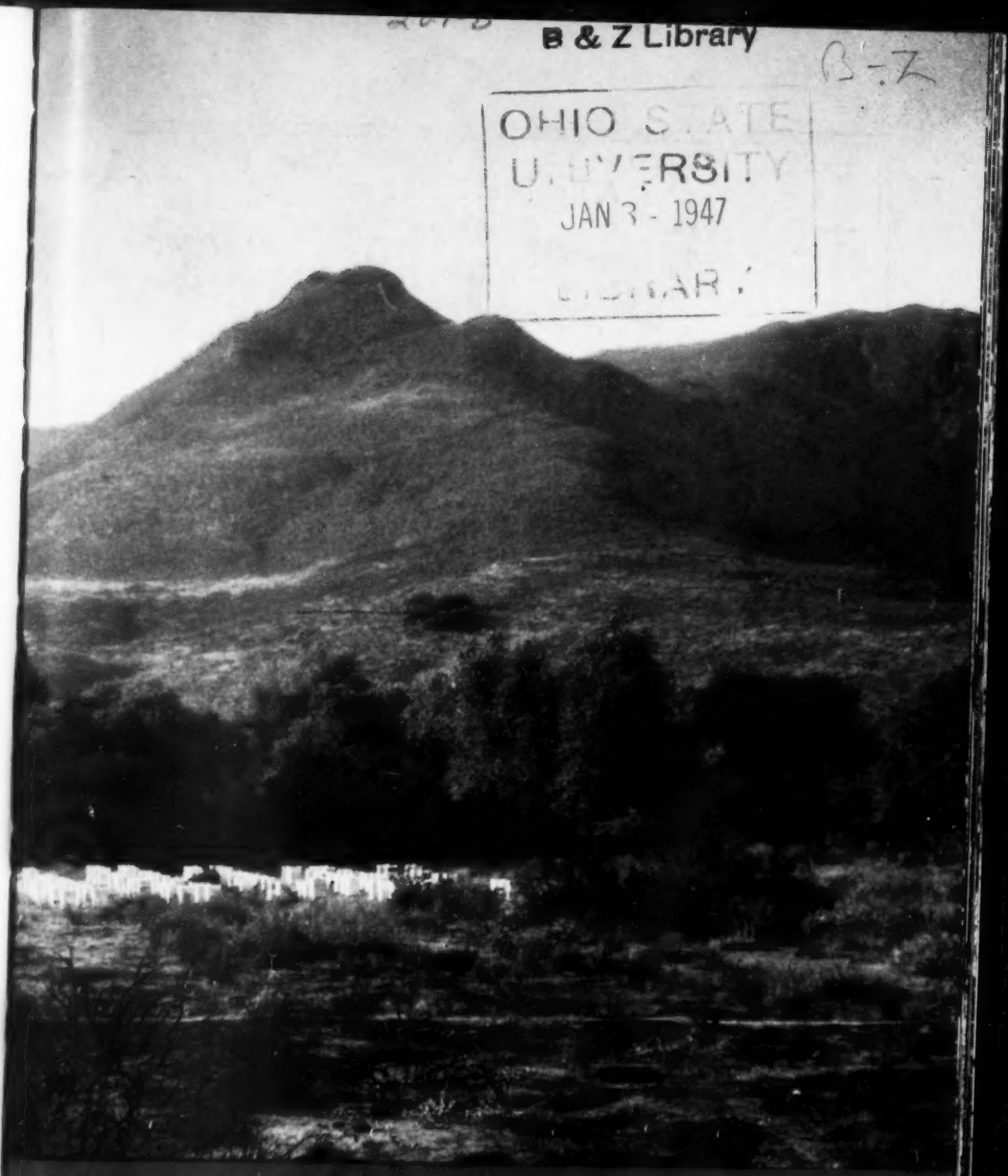

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January, 1947

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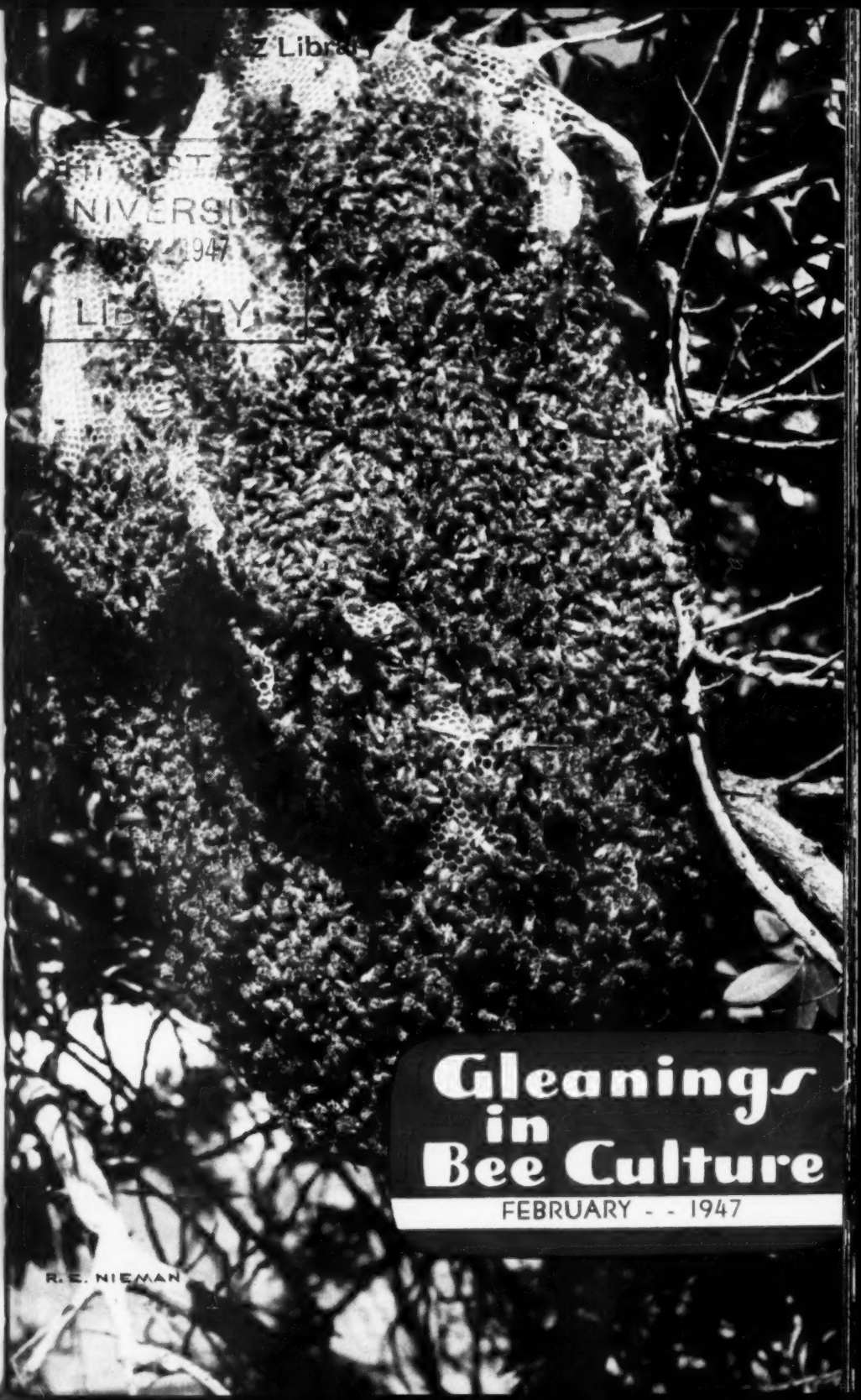

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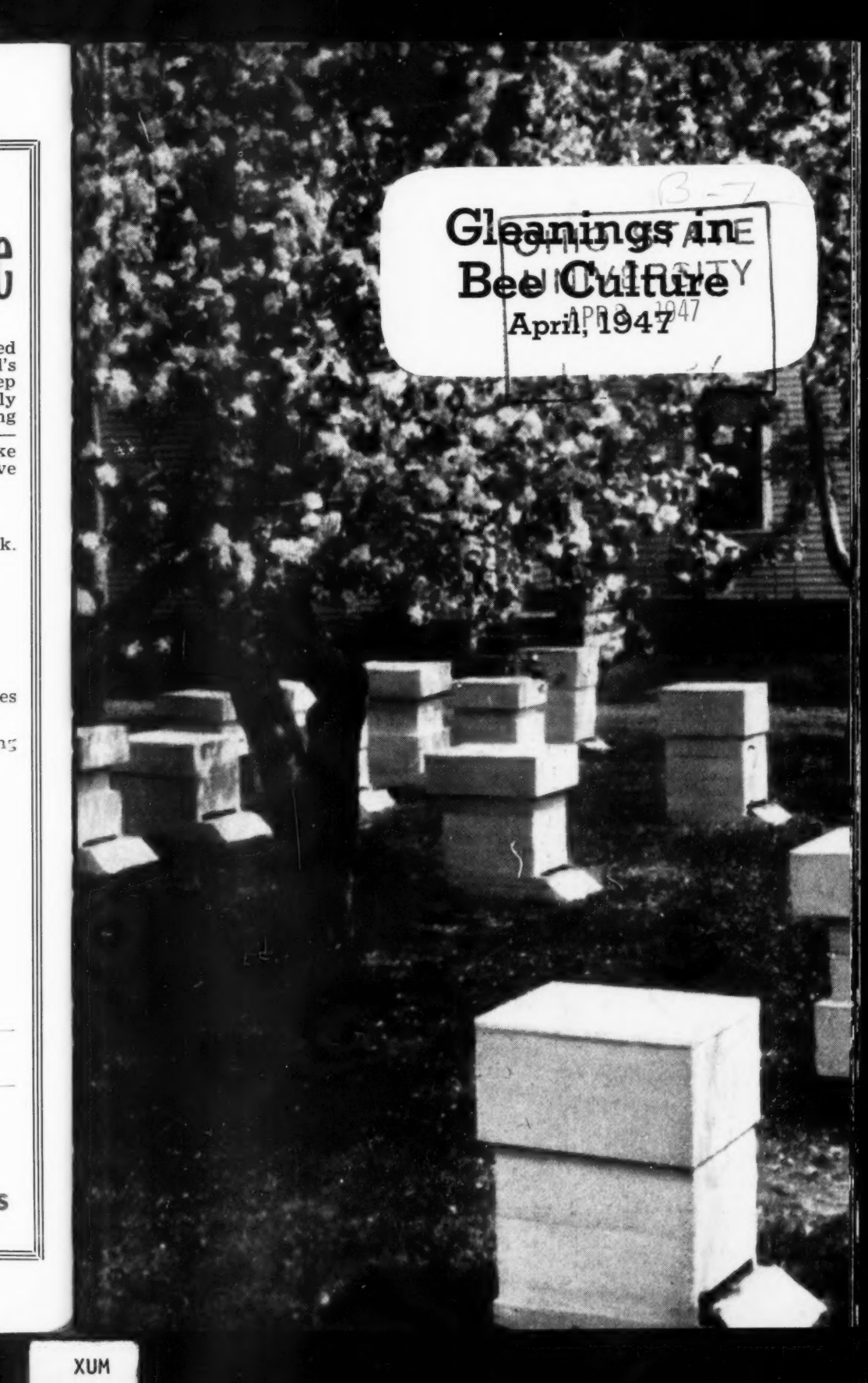

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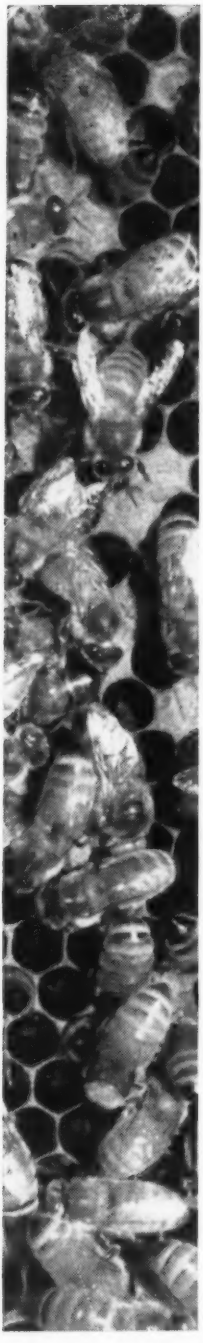

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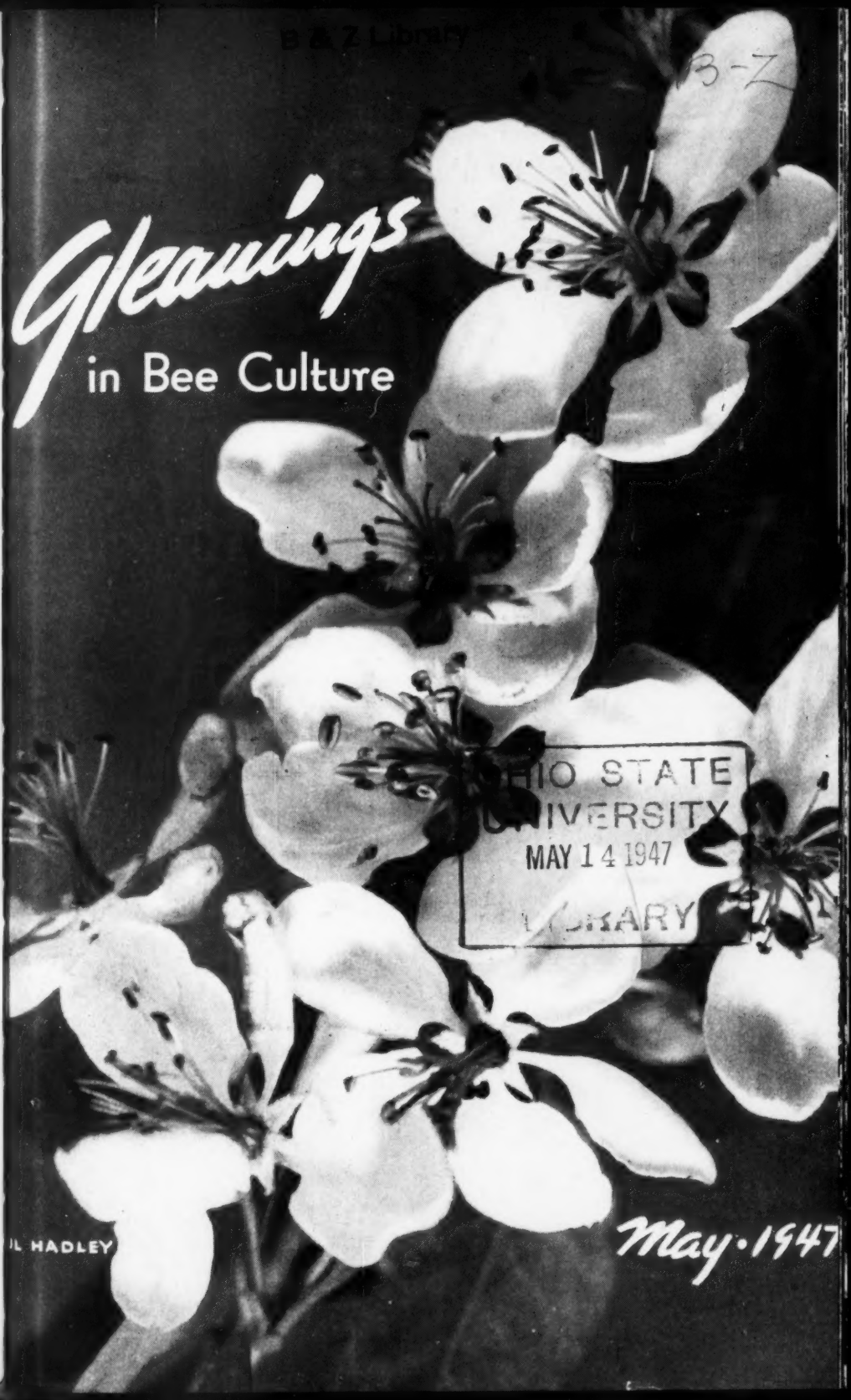

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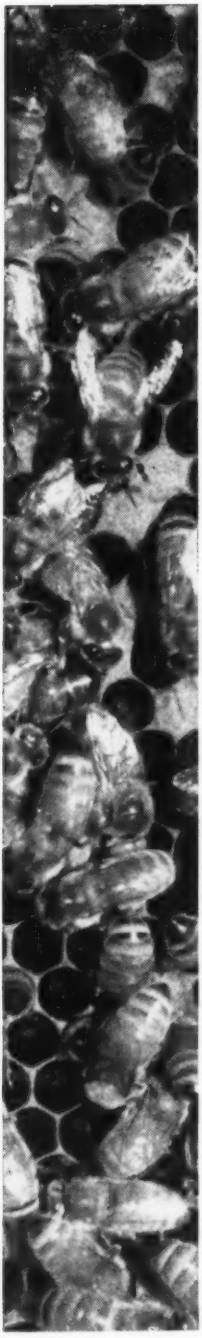

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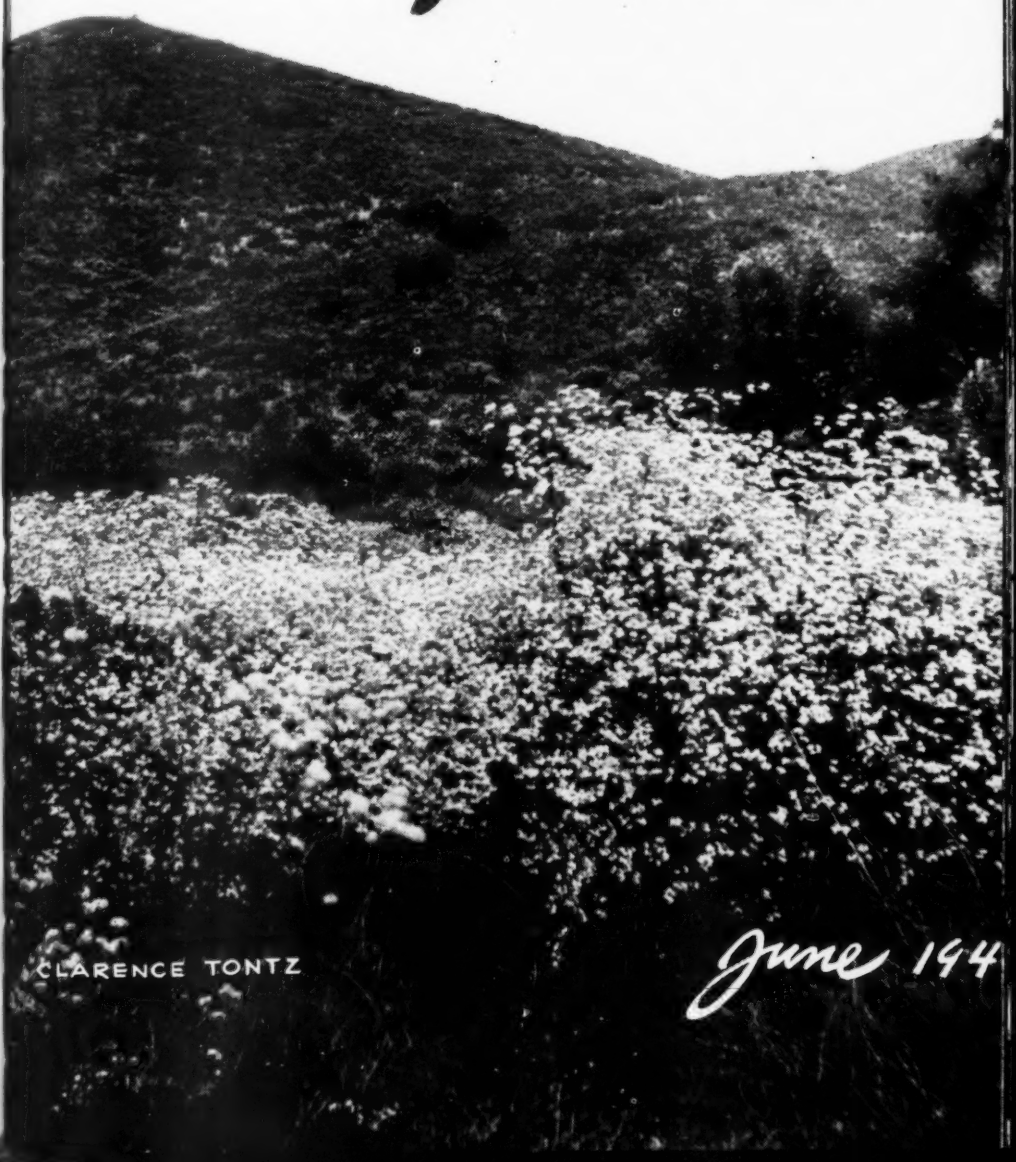

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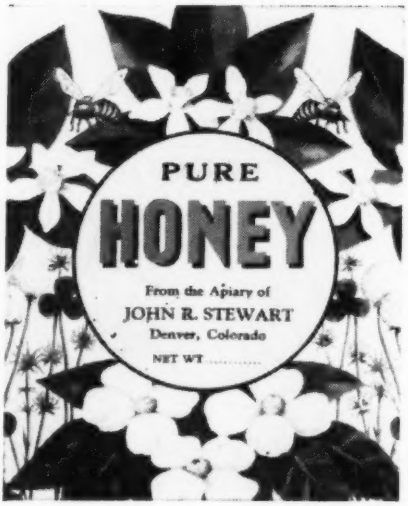

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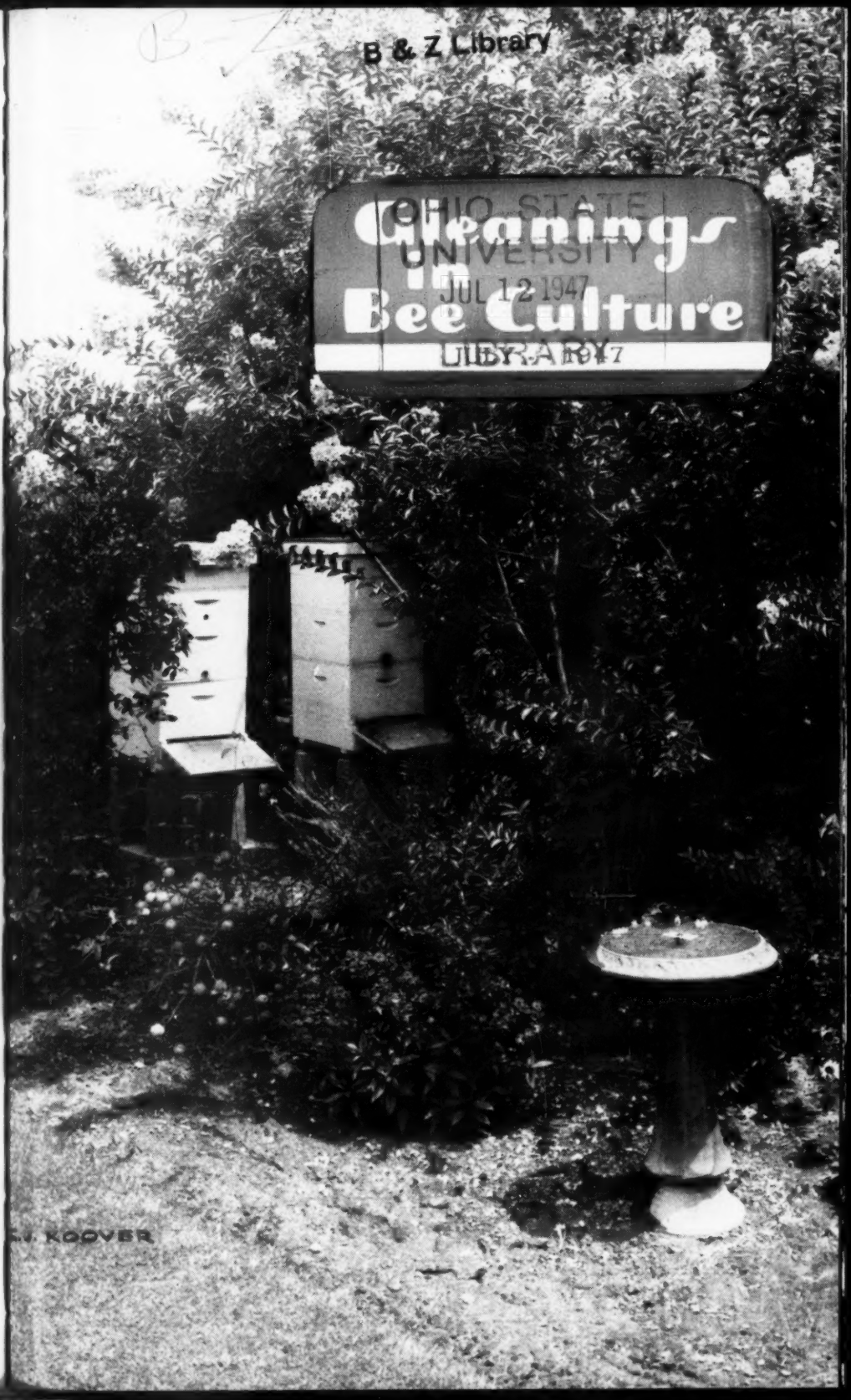

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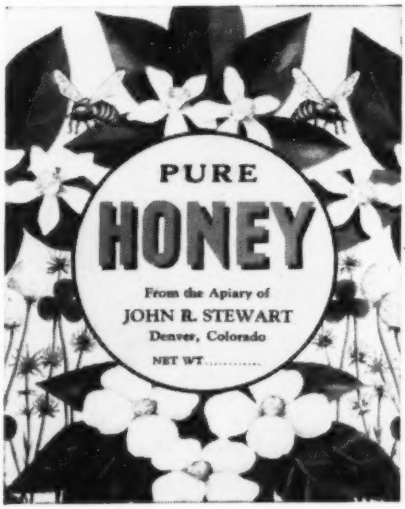

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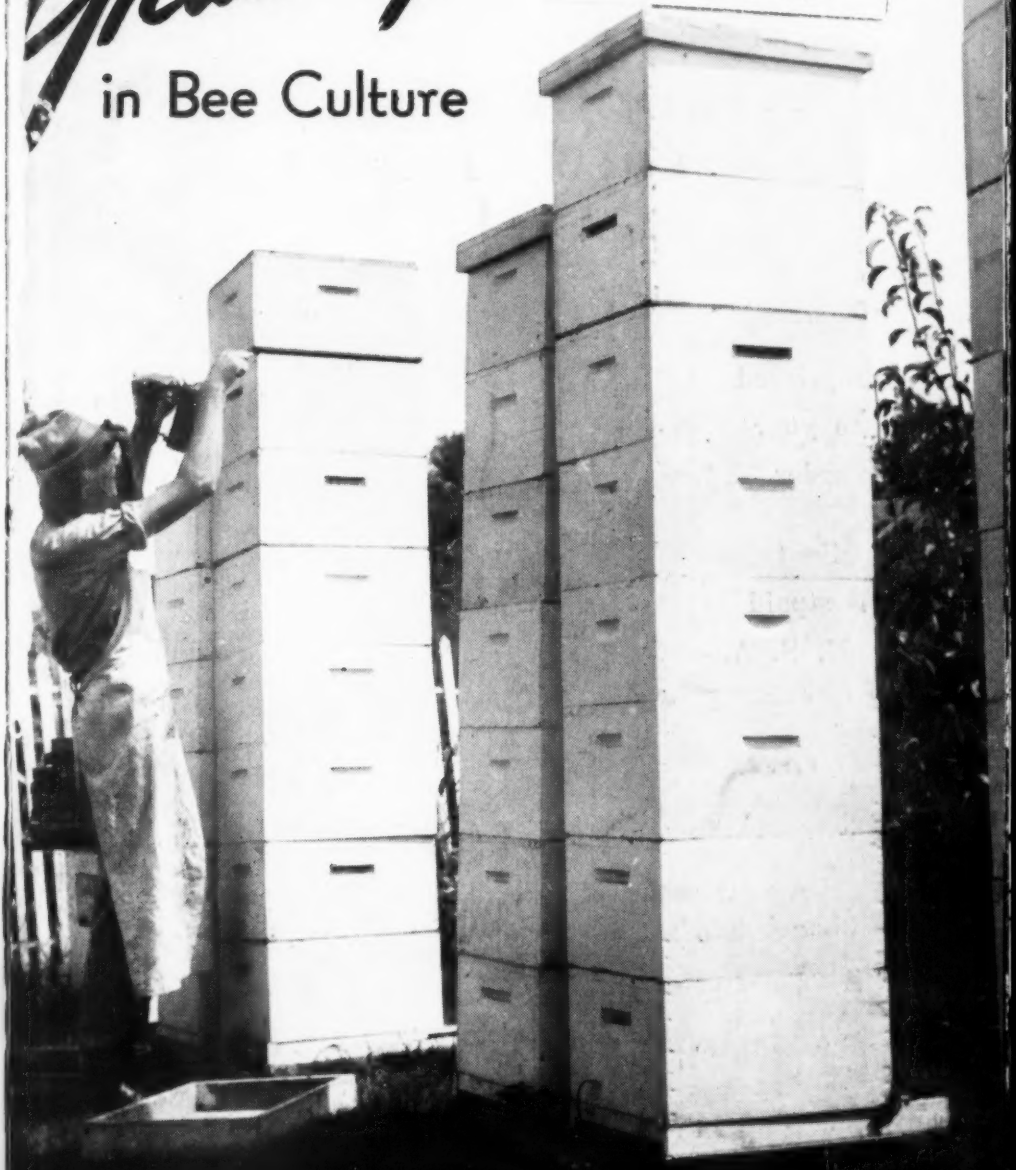

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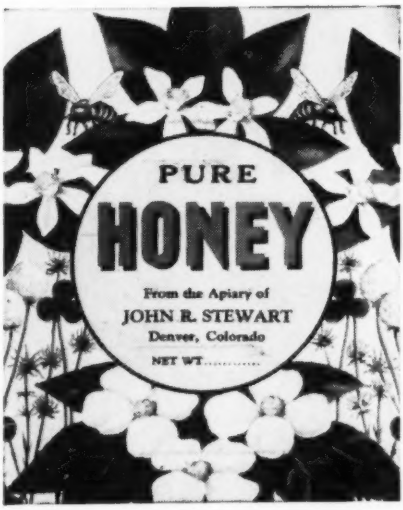

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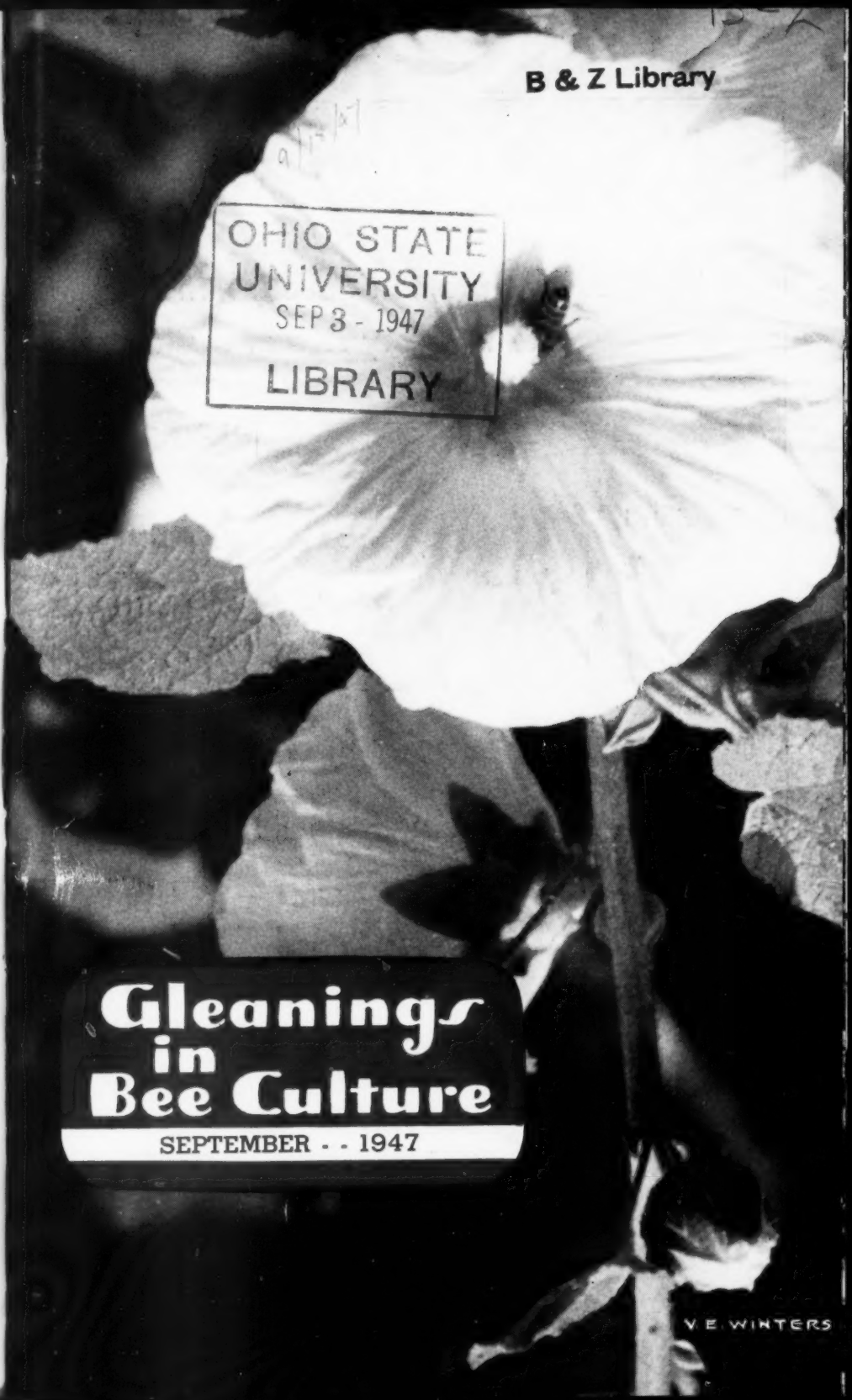

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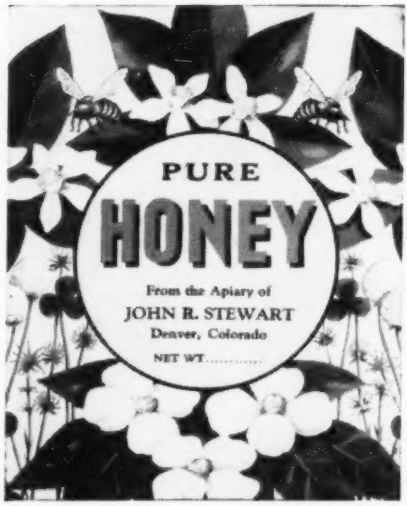

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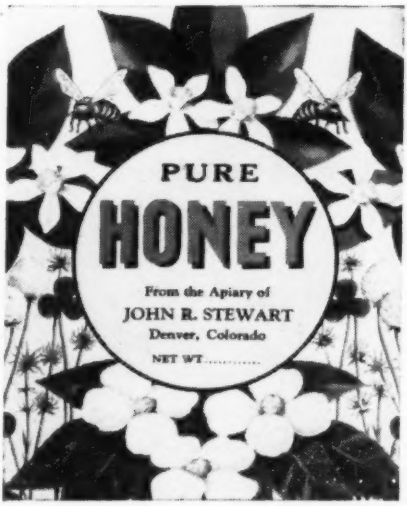

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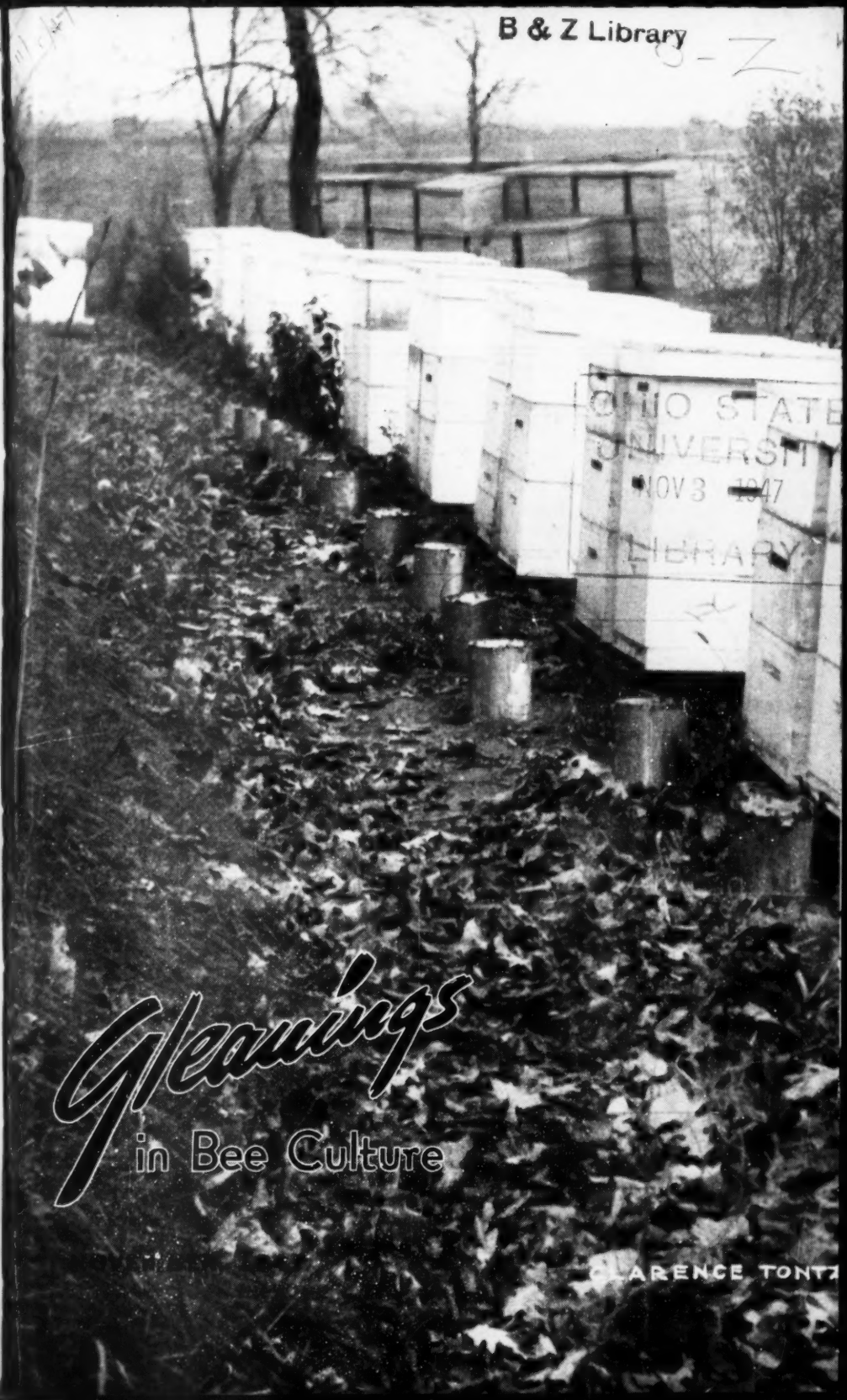

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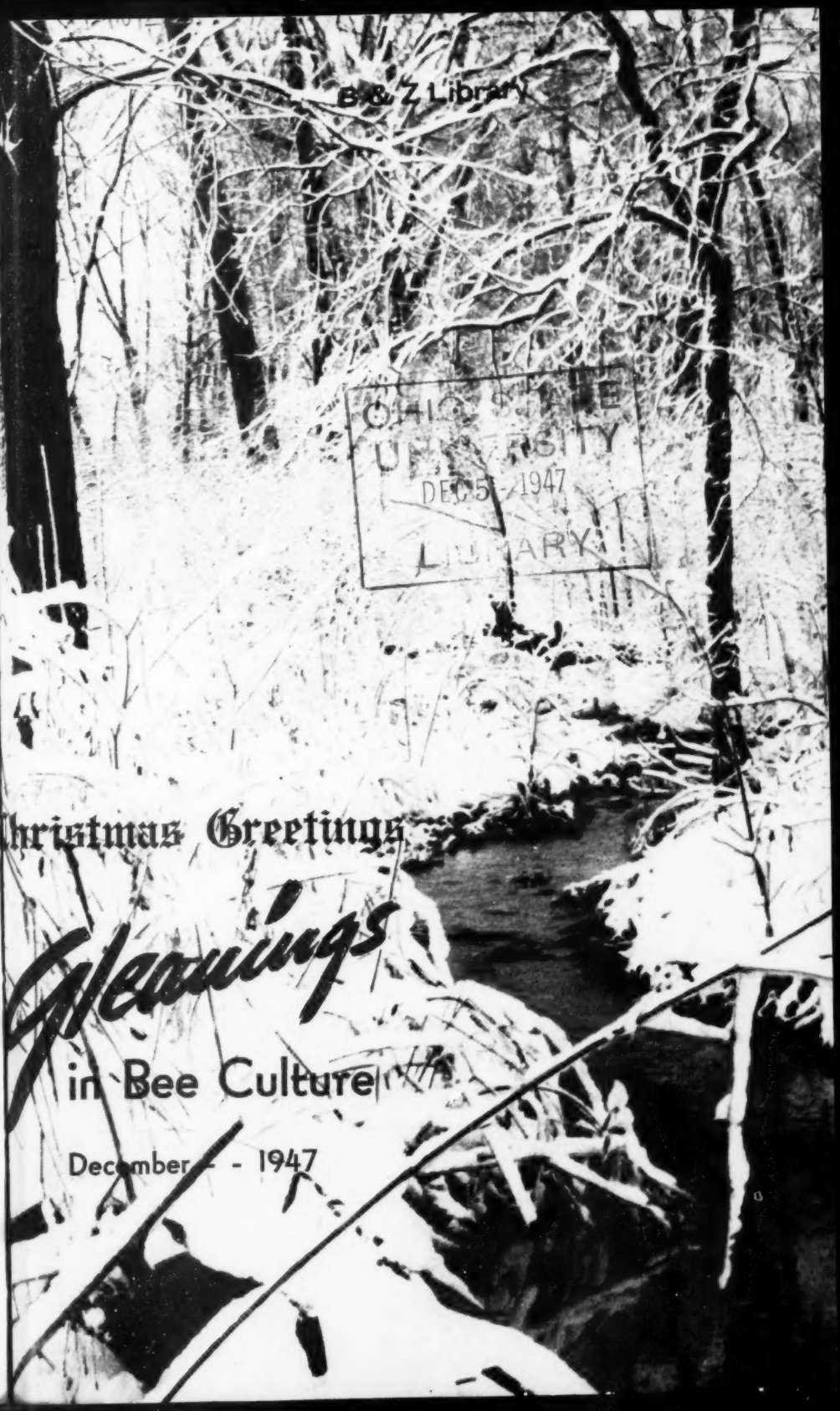
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